THE HISTORY OF
INOCULATION AND VACCINATION

LECTURE MEMORANDA
C.M.A. MEETING
LONDON, ONTARIO
1913

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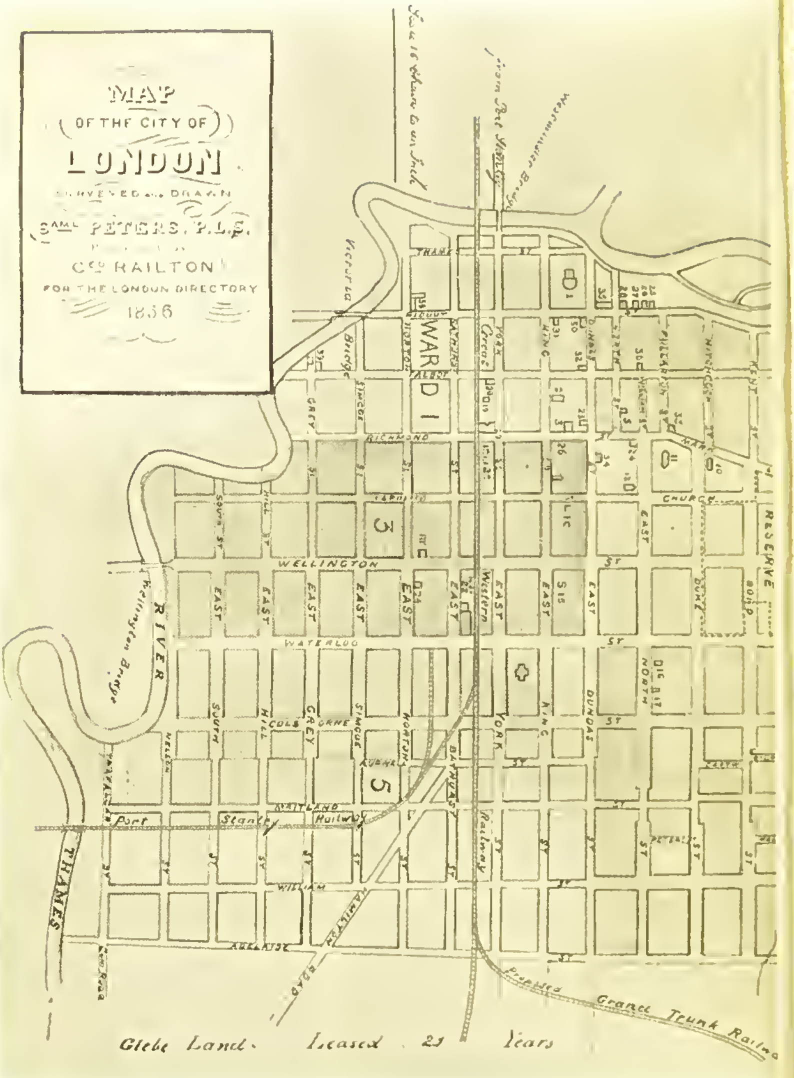

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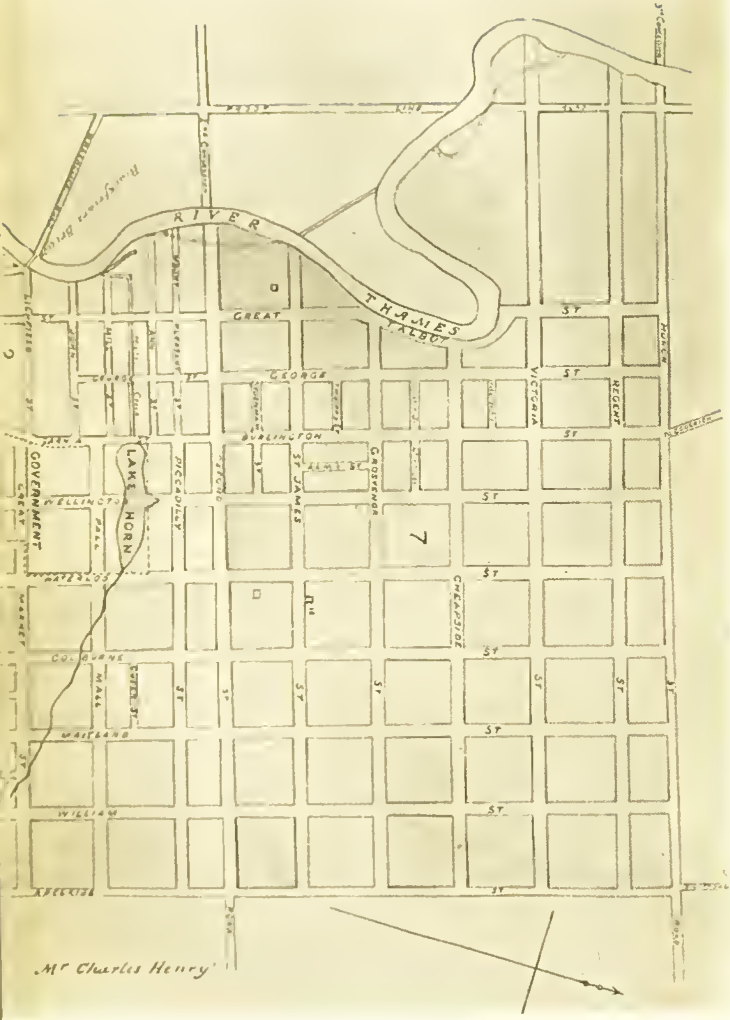

ONTARIO. 1856

"VACCINATION"

DR. JENNER PERFORMING HIS FIRST VACCINATION

From a bronze by GIULIO MONTEVERDE

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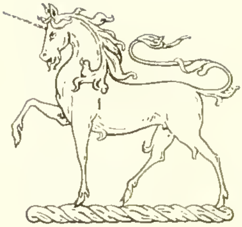

EDWARD JENNER, M.D.

THE DISCOVERER OF VACCINATION

Born, 1749 Died, 1823

THE HISTORY OF INOCULATION
AND
VACCINATION
FOR THE
PREVENTION AND TREATMENT OF DISEASE

LECTURE MEMORANDA

Canadian Medical Association

LONDON, ONTARIO

1913

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FOREWORD

THE HISTORICAL MEDICAL MUSEUM
LONDON (ENG.), 1913

THE Historical Medical Museum, in connection with the history of medicine, chemistry, pharmacy and the allied sciences, which I have been organising for some years past, will be opened on June 24, 1913, at 54a, Wigmore Street, London, W. (England).

With the valuable assistance of many who are also interested in this subject, and by their kind co-operation, a most interesting collection of objects illustrative of the history of the healing art, has, I am pleased to state, been brought together. The ground covered is comprehensive, and most branches of medicine, surgery and the allied sciences will be represented, from the early days of the world's civilisation down to more recent times.

The Museum, which is strictly professional and scientific in character, will be open from 10 a.m. daily. The general public will not be admitted. Tickets of invitation will be forwarded on receipt of a professional card addressed to the Secretary, Historical Medical Museum, 54a, Wigmore Street, London, W. (England).

HENRY S. WELLCOME

THE HISTORY OF INOCULATION AND VACCINATION
FOR THE
PREVENTION AND TREATMENT OF DISEASE

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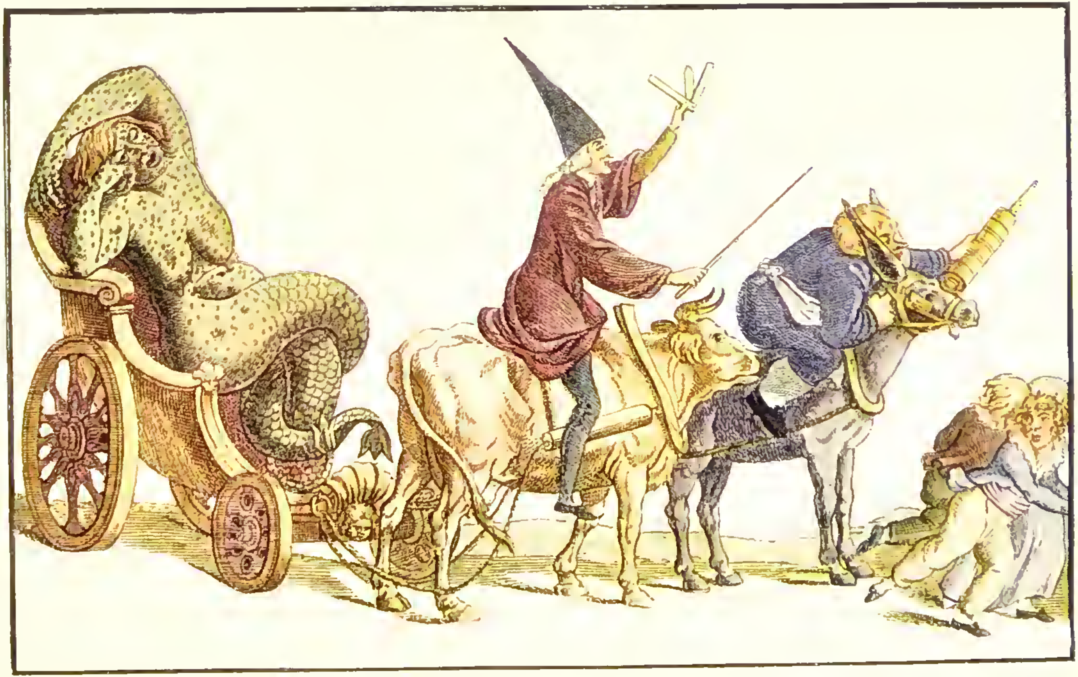
NOTE

The illustrations used as Head-pieces. Tail-pieces. etc., in this book are reproduced direct from the woodcuts of the celebrated English engraver, THOMAS BEWICK, who was a contemporary of Jesty and Jenner.



BEWARE! THE VACCINE

From a French caricature of the XVIII century

THE HISTORY OF INOCULATION AND VACCINATION FOR THE PREVENTION AND TREATMENT OF DISEASE

CHAPTER I

THE PRACTICE OF INOCULATION IN ANTIENT TIMES

The antiquity of inoculation

THE practice of inoculation for the prevention of disease is one of considerable antiquity. The period of its discovery can only be conjectured, but there is little doubt that even in remote times it must have been recognised by man, that certain diseases occur once only during the life of an individual, or that after recovery he is generally immune against further attacks of the same disease. He also probably noticed that even a mild form of a complaint often conferred a certain protection against a further attack.

The earliest attempts to utilise this protective act of Nature probably consisted in exposing children to the infection of some disease such as measles, in a mild form, in order to protect them against severer forms of the complaint in future. This custom was practised down to comparatively recent times.

First steps

Thus it is probable that a vague appreciation of the principles of immunity existed at a very early period. From this knowledge it was but a short step to the artificial production of certain diseases; especially when it was found, as in the case of smallpox, that a mild form of the complaint could be induced by the inoculation of the contents of a pustule into a healthy subject, and that such an inoculation was to some extent a safeguard against the possibility of contracting a severe attack of the disease.

From accounts recorded by explorers, there is evidence that inoculation in some form has been practised among savage tribes and barbaric peoples in various parts of the world, from an unknown period. It is probable that the custom had its birth in India and the Far East, and thence spread westward to Africa and Europe.

Inoculation against snake poisoning

Colonel Serpa Pinto, the Portuguese traveller, found in 1877 that certain races in North-east Africa practised a form of inoculation against the bites of poisonous snakes. He states that they mix the venom of serpents with certain vegetable juices, and rub the brown paste so formed into incisions in the skin of the arm. He was thus inoculated himself, and states that the operation was followed by pain and swelling, but it seemed to be effective and to produce an immunity to certain poisons, as he was afterwards bitten by a venomous snake without any after-effects.

The bush negroes in Surinam also are said to practise a similar method of inoculation to protect themselves against the bites of poisonous snakes.

"Buying the smallpox"

Bruce, in his "Voyage to the Sources of the Nile," 1790, says he found that inoculation as a protection against smallpox had been practised in Nubia from time immemorial by the negresses, the Arab women, Nubians, Shillooks, and other native tribes. The operation was called by them "*tishjerée*" and "*tidderé*," or, as among other African nations, "buying the smallpox." The method was by contact. A woman would bind a piece of cotton material round the arm of someone suffering from smallpox, which, when impregnated with the virus, she would apply to the arm of her child. Bruce states that "nobody was known either in Sennaar or Abyssinia who had had smallpox more than once."

Inoculation as a preventive of smallpox was known to the Ashantees, and Bowditch states that a method of inoculation has been known and practised among the Moorish and Arab tribes in Northern Africa from antient times, to protect them from smallpox. They inoculate their patients both on the arms and legs in seven distinct places, thus using a mystic number.

Among some of the savage tribes that inhabit the regions of the Upper Congo, travellers state that a method of inoculation to prevent syphilis is practised by the natives.

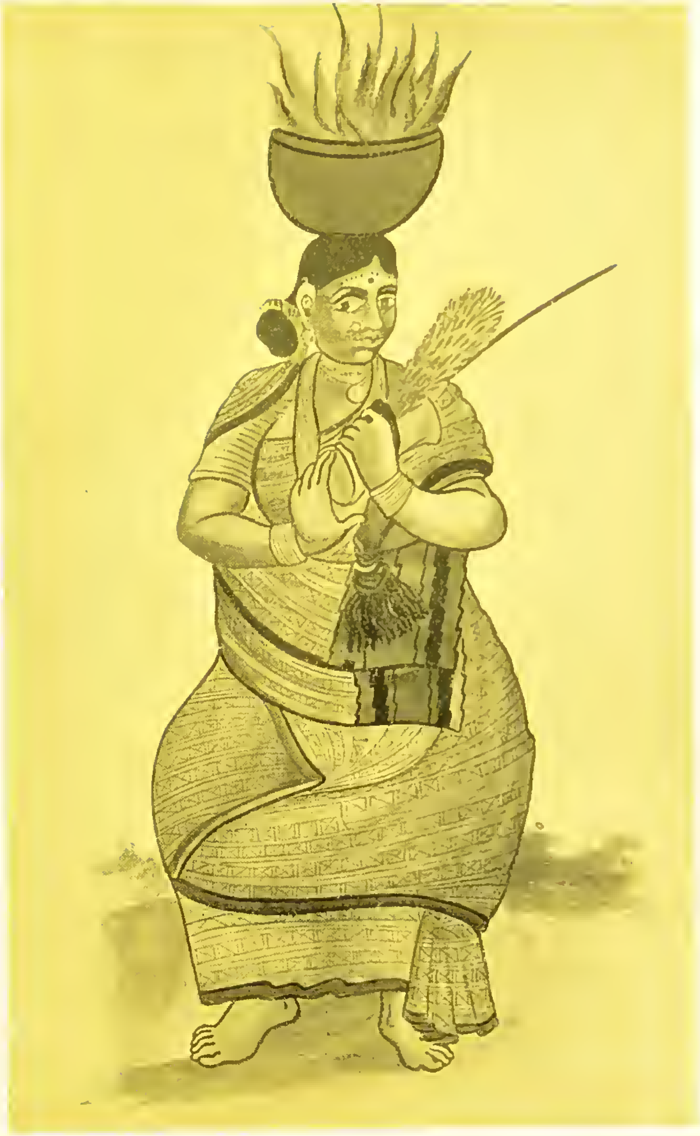
Inoculation for smallpox and venereal diseases

Felkin, in his "Travels among the Baris of Lado," 1882, says that "smallpox is often very prevalent in these districts, and also venereal diseases. At one time they were so bad that inoculation was practised, and this has since become the general law. It is performed over the left breast, and the natives say they believe the disease will be stamped out in time, so much good has resulted from the practice. It is a noteworthy fact that they have discovered this method, for after many enquiries I am quite certain it has not been introduced from foreign sources."

In other parts of Africa, also, explorers have recorded that they found inoculation known to, and practised by, the natives. Among the negroes in Senegal the practice of inoculating children on the arm against smallpox was a common one. After the operation they were made to abstain from animal food, and were allowed to drink freely of water acidulated with lime juice.

Pleuro-pneumonia in cattle

De Rochebrune relates that the Moors and Pouls of Senegambia have for ages inoculated their cattle against pleuro-pneumonia. "The point of a knife or dagger of primitive form is plunged into the lung of an animal that has died of the disease, and an incision, sufficient to allow the virus to penetrate below the skin of the healthy animal, is made into the supra-nasal region."



A MALABA WOMAN INVOKING THE GODDESS OF SMALLPOX AND CARRYING FIRE ON HER HEAD SYMBOLIC OF THE DISEASE

From a native drawing

It is stated that at Berne, in Switzerland, in the eighteenth century a similar form of inoculation against pleuro-pneumonia was practised.

According to Sternberg, the natives on the banks of the Zambesi cause animals afflicted with pleuro-pneumonia to swallow a certain quantity of the liquid from the pleural cavity of an animal recently dead. The method, however, which is employed most extensively, is that said to have been discovered by the Boers. This consists in inoculating animals in the tail, by means of a syringe or worsted thread, with serum from the lungs of an animal recently dead, or with virus obtained from the tumefaction produced by such an inoculation in the tail.

Boer methods

From evidence that has been gathered from various parts of the world, the practice of inoculation appears to have originated with smallpox, a disease of which the early history is somewhat obscure. It may be interesting, therefore, to recapitulate briefly what is known of its origin.

The antiquity of the disease in the Far East appears to be without doubt, but the documentary records concerning its first appearance are shadowy and uncertain. According to tradition, smallpox appears to have had its origin in India, where inoculation is said to have been practised over a thousand years before the Christian era.

The origin of smallpox and inoculation

Dhanwantari, the Vedic father of medicine, and the earliest known Hindu physician, who is supposed to have lived about 1500 B.C., is said to have been the first to have practised inoculation for smallpox. It is even stated that the antient Hindus employed a vaccine, which they prepared by transmission of the smallpox virus through the cow. King quotes the following, which is stated to be translated from the writings of Dhanwantari :

"Take the fluid of the pock on the udder of the cow or on the arm between the shoulder and elbow of a human subject on the point of a lancet, and lance with it the arms between the shoulders and elbows until the blood appears. Then, mixing this fluid with the blood, the fever of the smallpox will be produced."

Lord Ampthill, Governor of Madras, at the opening of the King Institute in February, 1905, said: "Colonel King gives clear proof that the antient caste injunctions of the Hindus were based on a belief in the existence of transmissible agents of disease, and that both Hindus and Mohammedans used inoculation by smallpox virus as a protection against smallpox: and certain it is that long before Jenner's great discovery, or, to be more correct, re-discovery of vaccination, this art of inoculation was used for a while in Europe, where it had been imported from Constantinople, and the knowledge of medicine which flourished in the Near East at the commencement of the Christian era, emanated, as I have already shown you, from India. It is also very probable, so Colonel King assures me, that the antient Hindus used animal vaccination, secured by transmission of the smallpox virus through the cow, and he bases this interesting theory on a quotation from a writing by Dhanwantari, the greatest of the antient Hindu physicians."

Brahmin inoculators

Holwell, writing in 1757, gives some interesting details as to the method of inoculation employed by the Hindus. He states: "It is performed in Indostan by a particular tribe of Brahmins, who are delegated annually for this service from the different colleges scattered throughout the distant provinces. Dividing themselves into small parties of three or four, they plan their travelling circuit in such a way as to arrive at the places of their expected destination some weeks before the usual return of the disease; they arrive commonly in the Bengal provinces early in February, although in some years they do not begin inoculation before

March, deferring it until they have considered the state of the season, and acquired information of the state of the distemper.

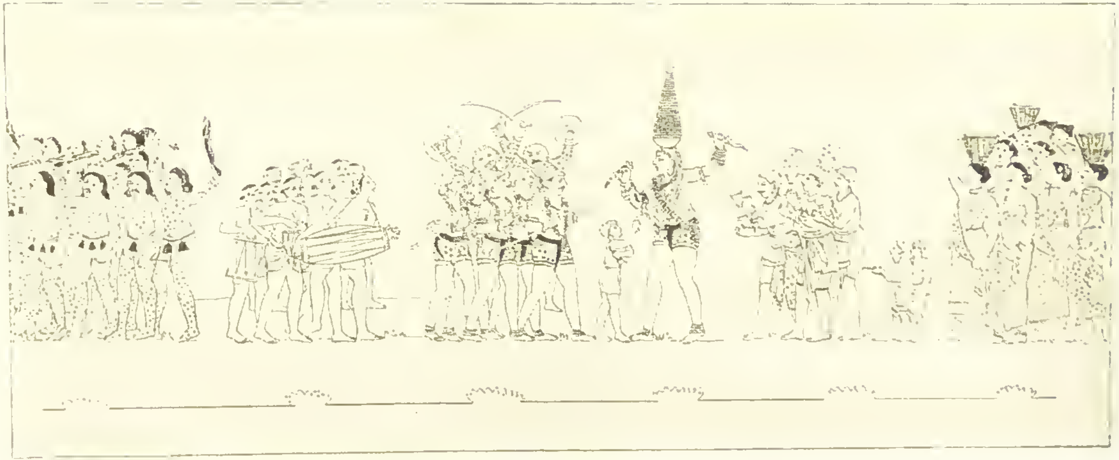
Dietetic regimen preparatory to inoculation

"The inhabitants of Bengal, knowing the usual time when the inoculating Brahmins annually return, observe strictly the regimen enjoined, whether they determine to be inoculated or not; this preparation consists only in abstaining for a month from fish, milk, and ghee (a kind of butter made generally of buffalo's milk): the prohibition of fish refers only to the native Portuguese and Mohammedans who abound in every province of the empire. When the Brahmins begin to inoculate, they pass from house to house and operate at the door, refusing to inoculate any who have not, on a strict scrutiny, duly observed the preparatory course enjoined them.

"It is no uncommon thing for them to ask the parents how many pocks they chuse their children should have. Vanity, we should think, urged a question on a matter seemingly so uncertain in the issue; but true it is that they hardly ever exceed or are deficient in the number required.

Method of inoculation

"They inoculate indifferently on any part; but, if left to their choice, they prefer the outside of the arm, midway between the wrist and the elbow for the males; and the same between the elbow and the shoulder for the females. Previous to the operation, the operator takes a piece of cloth in his hand (which becomes his perquisite if the family is opulent), and with it gives a dry friction upon the part intended for inoculation for the space of eight or ten minutes, about the compass of a silver groat, just making the smallest appearance of blood; then opening a linen double rag (which he always keeps in a cloth round his waist), he takes from thence a small pledget of cotton charged with the variolous matter, which he moistens with two or three drops of the Ganges



A RELIGIOUS DRAMATIC REPRESENTATION OF THE POWER OF THE HINDOO GODDESS OF SMALLPOX

From an Antient Oriental Drawing

The goddess stands with two uplifted crooked daggers, threatening to strike on the right and left. Before her is a band of the executors of her vengeance. Two of them wear grinning red masks, carry black shields, and brandish naked scimitars. White lines, like rays, issue from the bodies of the others, to indicate infection. On the left there is a group of men with spotted bodies, inflicted with the malady: bells are hung at their cinctures, and a few of them wave in their hands black feathers. They are preceded by musicians with drums, who are supplicating the pity of the furious deity. Behind the goddess, on the right, there advances a bevy of smiling young women, who are carrying gracefully on their heads baskets with thanksgiving offerings, in gratitude for their lives and their beauty having been spared. There is, besides, a little boy with a bell at his girdle, who seems to be conveying something from the right arm of the goddess. This action may probably be emblematic of inoculation. In a country where every thought, word and deed are mere repetitions of those of their progenitors, a composition like this bears the stamp of great antiquity. (Moore.)

water, and applies it to the wound, fixing it on with a slight bandage, and ordering it to remain on for six hours without being moved; then the bandage to be taken off, and the pledget to remain until it falls off itself." (During the time this operation lasts, he does not cease to repeat certain passages from a sacred book, stated by the Brahmins to be three thousand, three hundred and sixty-seven years old.)

"The cotton, which he preserves in a double calico rag, is saturated with matter from the inoculated pustules of the preceding year; for they never inoculate with fresh matter, nor with matter from the disease caught in the natural way, however distinct and mild the species . . . . Early on the morning succeeding the operation, four collons (an earthen pot containing about two gallons) of cold water are ordered to be thrown over the patient, from the head downwards, and to be repeated every morning and evening until the fever comes on (which usually is about the close of the sixth day from the inoculation), then to desist until the appearance of the eruptions (which commonly happens at the close of the third complete day from the commencement of the fever), and then to pursue the cold bathing as before through the course of the disease, and until the scabs of the pustules drop off. They are ordered to open all the pustules with a fine sharp-pointed thorn as soon as they begin to change their colour, and whilst the matter continues in a fluid state. Confinement to the house is absolutely forbidden, and the inoculated are ordered to be exposed to every air that blows, and the utmost indulgence they are allowed when the fever comes on, is to be laid upon a mat at the door; but, in fact, the eruptive fever is generally so inconsiderable and trifling as very seldom to require this indulgence. Their regimen is ordered to consist of plantains, sugar-canes, water-melons, rice, gruel made of white poppy-seeds and cold water, or thin rice gruel for their ordinary drink. These instructions being given, and an injunction laid on the patients to make a thanksgiving, Poojah, or offering to the goddess on their recovery, the operator takes his fee, which from the poor is a *pund of cowries*, equal to about a penny sterling, and goes on to another door down one side of the street, and up on the other; and is thus employed from morning to night, inoculating sometimes eight or ten in a house."

Inoculation in China

Although it is said by some that the practice was introduced from India about 200 B.C., China has often been referred to as being the birthplace of inoculation. This, however, is now disputed, and doubt is cast upon it, owing to difficulty in identifying the ideograph or Chinese written character signifying the name of the disease. Recent investigators are of the opinion that the word "smallpox" in China does not date earlier than the fourteenth century. There is a reference, however, in an antient Chinese work to an ambassador to the Court in A.D. 561, of whom it is said "he had just passed through the feverish disease, and his face was covered with scars," but this may or may not have been smallpox. In the year 1631, it was stated by Wylie that "smallpox has engaged the attention of the Chinese from near the commencement of the Christian era, and inoculation has been practised among them for a thousand years or more." He bases this statement, apparently, on a Chinese treatise on pock spots, said to have been published in 1323 and republished in 1542, but we have not been able to trace this work for verification.

In 1626

The most reliable evidence of the antiquity of the practice of inoculation in China is that given by François Xavier d'Entrecolles, who was a Jesuit missionary in China in the seventeenth century. He states definitely, in a letter written from Peking in May, 1726, that the practice was known in China for a century before that date, and quotes an extract from the works of a Chinese physician who lived in the Ming dynasty, *ca.* 1626, who mentions the practice, but says that as everyone must necessarily have smallpox once in their lives, it was better to let it be contracted naturally.

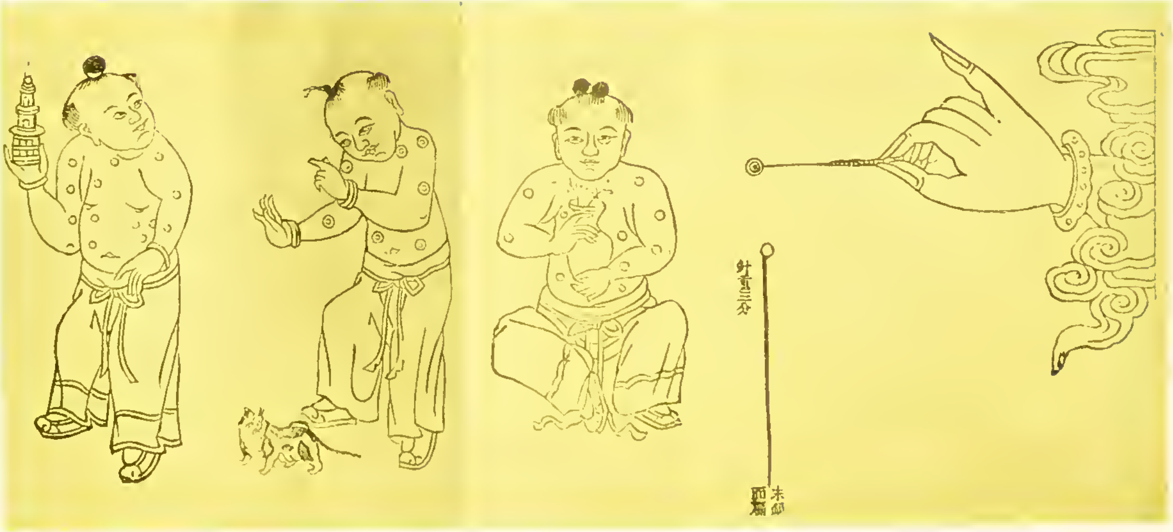
D'Entrecolles states, concerning the Chinese phrase for smallpox inoculation, "*tchung-tcou*," meaning "*tchung*" to sow, "*tcou*" smallpox, that the latter word also means "eating peas," and that the Chinese probably gave this name to smallpox on account of the similarity of the pustules to peas.

The Chinese method in 1726

According to a recipe given to the missionary by a Court physician in 1726, the Chinese placed the dried matter of the smallpox pustule in a vase, which they very carefully sealed. They stated that "if kept in this way, the matter would retain its virulence for several years, but that if the vase had the smallest opening it lost its virulence in twenty days. The method of inoculation was to take four scales, if small, or two, if large, and place musk between them, a little more than a grain in weight; place all in a piece of cotton, and insert in the nostril. In the case of a boy, place in the right nostril, and of a girl, in the left. The smallpox virus must be taken from young children, between the ages of one and seven."

If it were necessary to resort to the use of recent pustules, they were exposed to the steam of an infusion of the herb scorzonera and liquorice, in order to correct "the acrimony of the matter." Sometimes they used scales, previously dried and powdered, then made into a paste, the whole being wrapped up in cotton wool, and introduced into the patient's nostrils. This often set up a troublesome inflammation, and even if this did not take place, the inhalation into the lungs often produced the disease itself.

D'Entrecolles further states that the Emperor of China sent physicians from Peking, in 1724, to Tartary, the inhabitants of which country were suffering from an epidemic of smallpox, in order to inoculate the children against the disease. We are assured that the operations they performed were successful, a fact which seems to be corroborated by the statement



FIGURES SHOWING VACCINATION PUSTULES

From a Chinese work on Vaccination

that the physicians returned to Peking laden with presents of horses, skins, etc., presented to them by the Tartars in payment for their services.

Kirkpatrick, who also describes the Chinese method of inoculation, gives a slightly different account. He states that, instead of using the dried scales, a small piece of cotton was dipped into the fresh and fluid matter of the pustules, and immediately introduced into the nose. Apparently, therefore, the Chinese employed both the dried and fluid variolous matter, but the method of introduction through the nose appears to be peculiar to the Chinese.

Another account

In Tibet, inoculation is said to have been practised from antient times, the method employed being to dip a bundle of needles in a solution of the pock virus and the dried crusts in water, and then to prick the arm with the same.

In Siam a method of inoculation similar to that employed in China, whence it was probably introduced, is practised. The pus is taken from the pustules, and blown into the nostrils, and this is claimed to protect the individual thus inoculated against an attack of the disease.

The actual period of the first outbreak of smallpox in Europe was probably about the latter part of the sixth century. It appears to have travelled west through Arabia, Ethiopia and the neighbouring countries, and was brought by the Arabs into Egypt. It was apparently unknown to the Greeks and Romans, and, according to antient historians, does not appear to have attacked civilised nations engaged in commerce or wars in foreign countries, before the latter end of the sixth, or the beginning of the seventh century.

First outbreak of smallpox in Europe

The earliest definite statements concerning the disease come to us from Arabia, and, according to an Arab manuscript in the library at Leyden, the first record of smallpox dates from A.D. 572, the year of Mohammed's birth. From the following passages in the Chronicle of Bishop Marius, who died in A.D. 590, it might, however, be inferred that smallpox dates from a slightly earlier period than that indicated in the Leyden manuscript:—

"In 570 a powerful scourge with flow from the abdomen and pox spread extensively over Italy and France; and oxen in the mentioned countries were . . . ."

"In 571 an abominable infirmity and glanders, which is its name, and pustules, killed innumerable people in the above-mentioned countries."

There is further evidence of its appearance among the Abyssinian army of Abraha, at the siege of Mecca, in what was known as the Elephant War of A.D. 569 or 571.

Referring to this, Tabari, one of the most reliable of the Arab historians, states: "It has been told to us by Ibn Humaid, after Salima, after Ibn Ischâg, to whom Ja'gûb b. Otha b. Mughira b. Achnas related that one had said to him, that in that year the smallpoc appeared for the first time in Arabia, and also the bitter herbs, rue, colocynth (and another)."

He then proceeds to relate the following interesting legend as to the cause of the disease:—

"Thereupon came the birds from the sea in flocks, every one with three stones, in the claws two and in the beak one, and threw the stones upon them. Wherever one of these stones struck, there arose an evil wound, and pustules all over. At that time the smallpox first appeared and the bitter trees. The stones undid them wholly. Thereafter God sent a torrent which carried them away and swept them into the sea. But Abraha and the remnant of his men fled; he himself lost one limb after another."

In a former passage the calamity of Abraha is thus described: "But Abraha was smitten with a heavy stroke; as they brought him along in the retreat his limbs fell off piece by piece, and as often as a piece fell off, matter and blood came forth."

To illustrate this account by Tabari, his recent editor, Nöldeke, cites the following from an anti-Mohammedan poem: "Sixty thousand returned not to their homes, nor did their sick continue in life after their return." One of the elephants that dared to enter the sacred region is said to have been also wounded and afflicted by the smallpox.

"In this narrative of Abraha's disaster," says Nöldeke, "there is a mixture of natural causation and of purely fabulous miracle; a real and sufficient account of the Abyssinian leader's discomfiture, namely an outbreak of smallpox, had been blended with legendary tales. That the disease was smallpox is made probable by the continuity of the Arabic name. Rhazes, under the same name, later described the symptoms, pathology and treatment of what was unquestionably the smallpox afterwards familiar in Western Europe."

It is stated by another historian that smallpox broke out on the sacking of Alexandria by the Arabs in A.D. 640; thence it spread, by means of the pilgrims and commerce, through Egypt, Palestine, Syria and Persia, and is said to have broken out along the coast of North Africa. In the commencement of the eighth century it was known in Mauretania, and thence crossed the Mediterranean into Italy. It was also about this period that the Arabs and Moors introduced it into Spain, when they established themselves at Cordova. Afterwards it passed to Portugal, Navarre, Languedoc and Guienne, whence it was carried into Western and Northern Europe.

The earliest physician to describe smallpox was Ahrun, an Egyptian by birth, and a Christian priest, who lived at Alexandria under Heraclius (A.D. 610–641). He wrote a work on physic in thirty books, now lost, entitled "Pandectae Medicinae," in which he is said to have described the symptoms of smallpox and its eruption, and to have distinguished the milder from the dangerous variety. This work, originally written in Greek, was translated into Syriac by Gosius, about A.D. 680, and Maserjawaih, a Jewish physician of Bassora, translated it into Arabic, about A.D. 683, with the addition of some observations of his own as to the treatment of diseases of the eyes proceeding from smallpox.

The next to notice the disease was George, physician to Almangar, who was a great patron of learning. In a work written about A.D. 795 he describes smallpox and its symptoms.

The effects of smallpox are also noticed by John, a son of Mesue, a Syrian by birth, who was connected with the medical school of Baghdad, formed under the protection of Haroun Al Raschid, to whom he was physician. He advises, in his course of treatment, that "the body, if necessary, should be kept open until the seventh day."

Isaac Johannitius is the next physician to allude to smallpox. He recommends bleeding, and observes that the body should be restrained for three weeks.

The first complete treatise on the disease was written by Rhazes, about A.D. 920; originally written in Syriac, this work was translated into Greek and then into Latin.

Smallpox in Syriac was termed "chaspe," which was translated into Greek as Επφλογόω̃. The Latin translator first termed it "Incendium." The word "variolæ" is derived from the Hebrew ברם, meaning a spot or speck. Hence the Latin "varus" or "variola," the Italian "vajolo," the French "vérole," and the English "smallpox."

Rhazes describes the signs, characteristic symptoms and remedies for the disease, but the latter he borrows chiefly from his predecessor Ahrun.

The first allusion to smallpox in England is that made in the Anglo-Saxon manuscript, "Medicinale

Anglicum," which is said to have been written in the early part of the tenth century. In one of the leechdoms there is an allusion to the "pockes," the plural of a word which signifies "a pustule." On the appearance of the disease, bleeding is recommended, to be followed by the following treatment:—

"Against pockes: very much shall one let blood, and drink a bowlful of melted butter; if they (the pustules) strike out, one shall dig each with a thorn, and then drop one-year alder-drink in, then they will not be seen."

This last instruction, evidently intended to prevent pitting, clearly identifies the disease.

In Egypt, inoculation for smallpox is said to have been practised in the thirteenth century. Matty states that the Mamelukes introduced it at the time of the Crusades, and the conquering Arabs carried it to other parts of Africa, especially to the countries bordering the Red Sea. The slave merchants who brought the Mamelukes to Alexandria, whence they were taken to Cairo and sold to Saladin, probably played their part in spreading the knowledge of inoculation in the south of Egypt and adjacent countries. The method, however, is said not to have been largely favoured by strict Mohammedans.

A further allusion in early English medical literature to smallpox is made by John of Gaddesdon in the "Rosa Anglica," which was written between 1305 and 1314. He devotes a chapter to "De variolis (et morbilis)," but this does not appear to possess much originality, and is distinctly borrowed from the early Arab writers.

Sydenham was the first great English physician to make a study of the disease, and he advised the use of bleeding, and directed that the patient should be taken out of bed and exposed to the cool air of his room during the time the fever is at its highest.

DR. THOMAS DIMSDALE

(AFTERWARDS BARON DIMSDALE)

Born 1712 Died 1800

CHAPTER II

SMALLPOX INOCULATION IN EUROPE FROM THE SEVENTEENTH TO THE EIGHTEENTH CENTURY

From Asia and Africa the practice of smallpox inoculation passed into Europe by way of Greece and the coasts of the Bosphorus to Constantinople, where it was known at the latter part of the seventeenth century.

In 1701, when a serious epidemic of the disease broke out in that city, Timoni and Pylarini, two medical men who were there at the time, and who were aware of the practice, recommended the employment of inoculation.

Timoni first saw inoculation practised in Constantinople by two women, and describes the operation in detail.

Inoculation by women in Constantinople

"The Circassians, Georgians and other Asiaticks," he states, "have introduced this practice of procuring the smallpox by a sort of inoculation for about the space of forty years, among the Turks and others at Constantinople. They that have this inoculation practised upon them are subject to very slight symptoms, some being scarce sensible that they are ill or sick. The method of the operation is thus: Choice being made of a proper contagion, the matter of the pustules is to be communicated to the person proposed to take the infection, whence it has metaphorically the name of insition or inoculation.

"For this purpose they make choice of some boy or young lad, of a sound healthy temperament, that is seized with the common smallpox (of the distinct, not flux sort), on the twelfth or thirteenth day from the beginning of his sickness; they, with a needle, prick the tubercles (chiefly those on the shins and hands), and press out the matter coming from them into some convenient vessel or glass, or the like, to receive it. It is convenient to wash and clean the vessel first with warm water. A convenient quantity of this matter being thus collected is to be stopped close and kept warm in the bosom of the person that carries it, and as soon as may be brought to the place of the future expecting patient. The patient, therefore, being in a warm chamber, the operator is to make several little wounds with a needle in one, two or more places of the skin until some drops of blood follow, and immediately drop out some drops of the matter in the glass and mix it well with the blood issuing out; one drop of the matter is sufficient for each place prick'd. These punctures are made indifferently in any of the fleshy parts, but succeed best in the muscles of the arm or radius. The needle is to be a three-edg'd surgeon's needle; it may likewise be performed with a lancet. The custom is to run the needle transverse and rip up the skin a little, that there may be a convenient dividing of the part, and the mixing of the matter with the blood more easily perform'd; which is done either with a blunt stile or an ear-picker. The wound is covered with a half a walnut shell or the like concave vessel and bound over, that the matter may not be rubb'd off by the garments, which is all removed in a few hours. The patient is to take care of his diet. In this place the custom is to abstain wholly from flesh and broth for twenty or twenty-five days. This operation is performed either in the beginning of the winter or in the spring."

Their method described

Another method was described by Pylarini shortly afterwards, which he saw practised in Turkey by an old woman on the four sons of a Greek nobleman. It consisted in inserting the variolous matter into a number of punctures made on the forehead, cheeks, chin and wrist.

As stated by Timoni, the practice of inoculation for smallpox was introduced into Turkey from Circassia, where it was said to have been employed for a considerable period previously.

The Danes appear to have practised inoculation against smallpox from the seventeenth century, and, according to Bartholin, writing in Copenhagen, in 1673, "the practice was a common one in Denmark." In 1758, two inoculation houses were established by the King in the capital, and, in 1760, one of the royal princes was inoculated, with success.

In Denmark

In 1711, De La Motraye says that he saw the operation performed on a Circassian girl, four or five years old. The girl after being purged with dried fruits, was carried to a boy about three years old, who had caught the natural smallpox, and whose pocks were *ripe*. An old woman performed the operation; for women of advanced age exercised the practice of physic in Circassia. The manner of inoculating the disease he describes as follows:—

"She took three needles fastened together, and prick'd first the pit of the stomach; secondly, directly over the heart; thirdly, the navel; fourthly, the right wrist; and, fifthly, the ankle of the left foot, till the blood came. At the same time, she took some matter from the pocks of the sick person, and applied it to the bleeding part, which she covered, first with *angelica* leaves dri'd, and after with some of the youngest lamb-skins; and having bound them all well on, the mother wrapped her daughter up in one of the skin coverings, which, I have observed, compose the Circassian beds, and carried her thus packed up in her arms to her own home; where (as they told me) she was to continue to be kept warm, eat only a sort of pap made of cummin flower, with two-thirds water and one-third sheep's milk, without either flesh or fish, and drink a sort of tisan, made with *angelica*, *bugloss* roots and *licorish*, which are all very common throughout this country, and they assured me that with this precaution and *regimen*, the smallpox generally came out very favourably in five or six days."

The Circassian method

Kennedy, an English surgeon, in an essay on external remedies, written in 1715, describes the method of ingrafting the smallpox, as practised in the Peloponnesus, now called the Morea, which he states "at this present time is very much used both in Turkey and in Persia, where they give it in order to prevent its more dismal effects by the early knowledge of its coming, as also probably to prevent their being troubled with it a second time.

Persian and Turkish methods compared

"The Persians use the pock and matter dried into powder, which they take inwardly, but in Turkey, more particularly in Constantinople, they first take a fresh and kindly pock from someone ill of this distemper, and having made scarifications upon the forehead, wrists and legs, or extremities, the matter of the pock is laid upon the foresaid incision, being bound on there for eight or ten days together; at the end of which time, the usual symptoms begin to appear, and the distemper comes forward as if naturally taken ill, though in a more kindly manner and not near the number of pox. During this time, or from the scarifications being made, the patient is closely confined to his room, so as in no way to be exposed to the air: and the regimen or diet during the whole time of confinement is altogether from flesh, and one kept mostly to water-gruel. By this very regular way of living the distemper, or pock, comes out more kindly and less dangerous, since it is very probable that most of the malignity is increased and augmented by the irregularities committed in their diet or their manner of living some few days before the malady appears—which, when it comes naturally, cannot be so well seen or known how to prevent its worst symptoms, so as when given after this manner."

In 1726, Dr. Russell, a physician then residing in Aleppo, records the fact that he met with an old Bedouin servant, who was familiar with the practice of inoculation. This, she asserted, was done with a needle, and she herself had received the disease in that manner when a child. She informed Dr. Russell the practice was well known to the Arabs, and that they termed it "buying the smallpox." On prosecuting further enquiries into the subject, Russell found that the practice of inoculation had been one of long standing among the Arabs, and even those over seventy years of age remembered to have heard of the custom among their ancestors.

Known to the Arabs

Their method of operating was to make several punctures in some fleshy part with a needle which had been charged with variolous matter taken from a favourable kind of pock. They used no preparatory treatment, and the disease communicated in this way, they affirmed, was always slight. The origin of the term "buying the smallpox," is somewhat curious, and it is said to have taken rise from the following ceremony:—

"The child to be inoculated carries a few raisins, dates, sugar plums, or such like; and showing them to the child from whom the matter is to be taken, asks how many pocks he will give in exchange. The bargain being made, they proceed to the operation. When the parties are too young to speak for themselves, the bargain is made by the mothers. This ceremony, which is still practised, points out a reason for the name given to inoculation by the Arabs; but by what I could learn among the women, it is not regarded as indispensably necessary to the success of the operation, and is, in fact, often omitted."

The Arabian method

The same custom was found to prevail among the Eastern Arabs, not only at Baghdad and Mousul, but in Bassora. At Mousul the appearance of smallpox was announced by the public crier, so that those who wished might have their children inoculated.

Various races appear to have inoculated in different parts of the body. Thus the Arabs usually chose the hand, between the thumb and first finger, the Georgians the forearm, and the Armenians both thighs.

In Armenia

In Armenia the Turkoman tribe, as well as the Armenian Christians, are said to have practised inoculation for a period beyond the memory of man, but they are unable to give any account of its first introduction among them. Along the coast of Syria and Palestine, and also at Damascus, inoculation has long been practised, and in the Castravan mountains it is known to, and employed by, the Drusi as well as the Christians.

Tripoli, Tunis, Algiers

In Tripoli, Tunis and Algiers, the practice of inoculation was described by Cassim Aga, ambassador in England in 1728. He states that the method employed by those who wished to have their children inoculated was to carry them to one that was afflicted with the smallpox at the time when the pustules had come to full maturity. "Then the surgeon makes an incision on the back of the hand, between the thumb and forefinger, and puts a little of the matter, squeezed out of one of the largest and fullest pustules, into the wound. This done, the child's hand is wrapped up in a handkerchief to keep it from the air, and he is left to his liberty till the fever arising confines him to his bed, which commonly happens at the end of three or four days. After that, by God's permission, a few pustules of the smallpox break out upon the child. All this I can confirm by the domestic proof, for my father carried four brothers and three sisters to the house of a girl that lay ill of the smallpox, and had us all inoculated the same day." He concludes by stating that "this practice is withall so antient in the kingdoms of Tripoli, Tunis and Algiers, that nobody remembers its first rise, and it is practised generally, not only by the inhabitants of the towns, but also by the wild Arabs."

In Western Europe, according to Schwenk, inoculation was practised in Meurs, in France, and also in

Cleves, as early as 1712. In 1707, Boyer records that it was known to the peasants in Auvergne and Perigord. In 1752, attention was again called to the matter, by Butini of Montpelier, and by De La Condamine. Three years later, Tergot inoculated a child four years of age, and one M. Chastellux, aged twenty-four, also submitted to the operation.

In Western Europe

A serious and fatal outbreak of smallpox in Paris in 1763 was attributed partly to inoculation, with the result that the practice was prohibited by the Government. But, five years later, on the recommendation of the medical faculties, this decree was rescinded, and during the latter part of the eighteenth century it was again commonly practised in Paris.

A curious sidelight which shows how the burning questions of the time are reflected even on the fashions of the day, is related in the life of the famous Mlle. Rose Bertin, who was milliner to Marie Antoinette. Mlle. Bertin owed her European reputation to her taste and the ingenuity with which she utilised current events to vary her fashionable designs. In the latter part of the eighteenth century the elaborate coiffeurs affected by ladies of the period were of the most extraordinary description. One of these, known as the "pouf á l'Inoculation," was introduced by Mlle. Rose Bertin to coincide with the inoculation of the young king, Louis XVI. which took place on June 18, 1774. For some time after this interesting event every lady who wished to be in the fashion wore in her hair a miniature model of the rising sun, and a heavily laden olive tree, round whose trunk was entwined a serpent, supporting a club, wreathed with flowers. This device was supposed to symbolise the power of medicine, represented by the snake, to overcome the horrors of smallpox; the rising sun was supposed to symbolise the royal patient, who was a descendant of "le roi soleil," while the olive tree represented the peace and joy of his loving subjects at the successful issue of the operation.

Mlle. Rose Bertin

In Germany, inoculation appears to have been first introduced by Maitland in 1724, who journeyed to Hanover to operate on Prince Frederick of Prussia. and afterwards on the family of a German baron, consisting of eight children. The practice, however. made little progress until 1768, when, after the inoculation of some members of the Imperial family, it became more general. In Berlin it fell into disfavour owing to several deaths from smallpox being attributed to it, and it was not until the end of the eighteenth century that attention was again called to the matter.

In Germany

In Italy, according to De La Condamine, inoculation was known and secretly practised by the Neapolitans. from an early period. He states that it was frequently performed by nurses, who were in the habit of inoculating the infants entrusted to their care, without even the knowledge of their parents, by rubbing the palm of the hand with variolous matter recently taken from a smallpox pustule.

In Italy

During the great epidemic of smallpox in 1754 the practice was introduced into Rome by Peverini. but he encountered considerable opposition. and it was not until some years afterwards that it became common in Italy.

Tronchin is said to have been the first to introduce the practice of inoculation into Holland in 1758. when he performed it on one of his sons; while in Switzerland a lady living in Lausanne inoculated her own child in 1751. and her example was speedily followed by others.

In Holland

Mead, writing in 1765, with reference to inoculation. states: "It was the invention of the Circassians. the women of which country are said to excel in beauty, upon which account it is very common, especially among the poorer sorts. to sell young girls for slaves to be carried away into

In Circassia

the neighbouring parts. When, therefore, it was observed that they who were seized with this distemper (smallpox) were in less danger, both of their beauty and their life, the younger they were, they contrived this way of infecting the body so that the merchandise might bring the greater profit."

In Russia, owing to the enthusiasm and interest taken in the subject by the Empress Catherine II, Dr. Dimsdale, a London practitioner, who had become recognised as a specialist in inoculation, was sent for to introduce the practice into that country. He was summoned to St. Petersburg in 1768, and first performed the operation on two boys of about fourteen years of age. The matter for their inoculation had been taken from a child of the poorer classes in the suburbs of St. Petersburg, who was said to be "pretty full of a distinct kind of smallpox." These were followed by four more youths, and a young maidservant, for further trial, and a case of natural smallpox with the eruption in a suitable stage for the purpose was chosen.

In Russia

These cases proving satisfactory, the Empress herself determined to undergo inoculation, and a child, on whom smallpox had just begun to appear, was selected and taken to the Palace. The operation was performed secretly, and was apparently unattended by any untoward results, as the lady is said to have taken part in every amusement "with her usual affability, without showing the least token of uneasiness or concern, and constantly dined at the same table with the nobility."

Shortly afterwards Dimsdale inoculated the Grand Duke, and for these royal services he was made a Baron of the Russian Empire, appointed Councillor of State, and Physician to Her Imperial Majesty. He was also awarded the sum of one thousand pounds in addition to an annuity of five hundred pounds.

At the request of the Empress, Dr. Dimsdale proceeded to Moscow, where many were desirous of being inoculated.

Dimsdale's method

With respect to his method, he restricted himself to inoculating by means of a lancet, the point of which was slightly dipped in variolous matter taken during the eruptive fever. The lancet was introduced obliquely beneath the superficial skin, making a very tiny puncture. If there were no patients in a proper state to yield the variolous matter, dried lymph was employed. The lancet or a plate of glass or gold was charged with the matter in a fluid state, which was then allowed to dry. When required for use it was held over the steam of boiling water, or a small quantity of water, barely sufficient for dilution, was added to it, and the matter thus moistened was used for the purpose of inoculation.

Some idea of the terrible mortality from smallpox in Europe at the end of the eighteenth century may be gathered from the fact that the average annual death-rate throughout the Continent was two hundred and ten per thousand. During epidemics this was even higher, and in Russia in one year no less than two million persons perished from the disease.

In America

In America, the practice of inoculation appears to have been first suggested at the time of the great smallpox epidemic, in 1721, by Cotton Mather, a clergyman. He was bitterly attacked, however, for recommending such a treatment, insomuch that his life was at one time in danger. In spite of this, he inoculated his son with success, and about the same time Dr. Zabdiel Boylston inoculated one of his children and two of his negro servants.

During the following six months he inoculated two hundred and forty-four persons, with the result, it is stated, that in six there was no effect at all, while six are said to have died in consequence of the inoculation. Boylston describes his method as follows:—

"Take your Medicine or Pus from the ripe pustules of the smallpox of the distinct kind, either from those in the natural way or from the inoculated sort, provided that the persons be otherwise healthy and the matter good. Then take a fine cut sharp tooth pick (which will not put the person in any fear as a Lancet will do in many) and open the Pock on one side and press the boil and scoop the matter on your quill and so on."

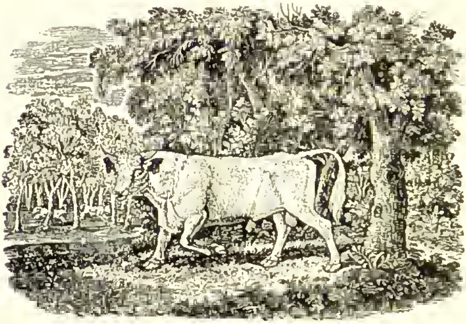
Boylston's experiments excited a great deal of opposition in America, and the practice fell into disrepute after a public meeting of medical practitioners had been called in Boston, where the practice was deprecated as causing the death of many persons, and it was contended that the operation was likely to prove of most dangerous consequences to those who submitted to it. Inoculation therefore made but little progress in America until 1764, when an epidemic of smallpox broke out in Boston, with the result that three thousand persons were successfully operated on.

In South America, the practice of inoculation was introduced by a Portuguese Carmelite missionary. He appeared to have had no practical experience of it, but was a firm believer in its efficacy, and in 1728, when smallpox was ravaging the neighbourhood of Para, he performed the operation on a number of people with most satisfactory results. His example was successfully followed by another missionary at Rio Negro.

In Mexico

In Mexico, which was ravaged by epidemics of smallpox during the sixteenth century, inoculation was introduced in 1797, at the time of an epidemic in the environs of Mexico City. According to Humboldt, in his "Political Essay on the Kingdom of New Spain," 1808, in the capital of the bishopric of Michoacan, "out of 6,800 people inoculated only 170 died. Several individuals, especially among the clergy, displayed very praiseworthy patriotism in arresting the progress of the disease by inoculation. There were then inoculated in the kingdom between fifty and sixty thousand individuals."

In January, 1804, vaccination was introduced into Mexico from North America, and made rapid progress. "If the vaccine inoculation," says Humboldt, "or even the ordinary inoculation, had been known in the New World in the sixteenth century several millions of Indians would not have perished victims to smallpox." For to this disease the great diminution in the number of Indians in California is to be ascribed.



CHAPTER III

INOCULATION IN THE BRITISH ISLES

"Buying the smallpox"

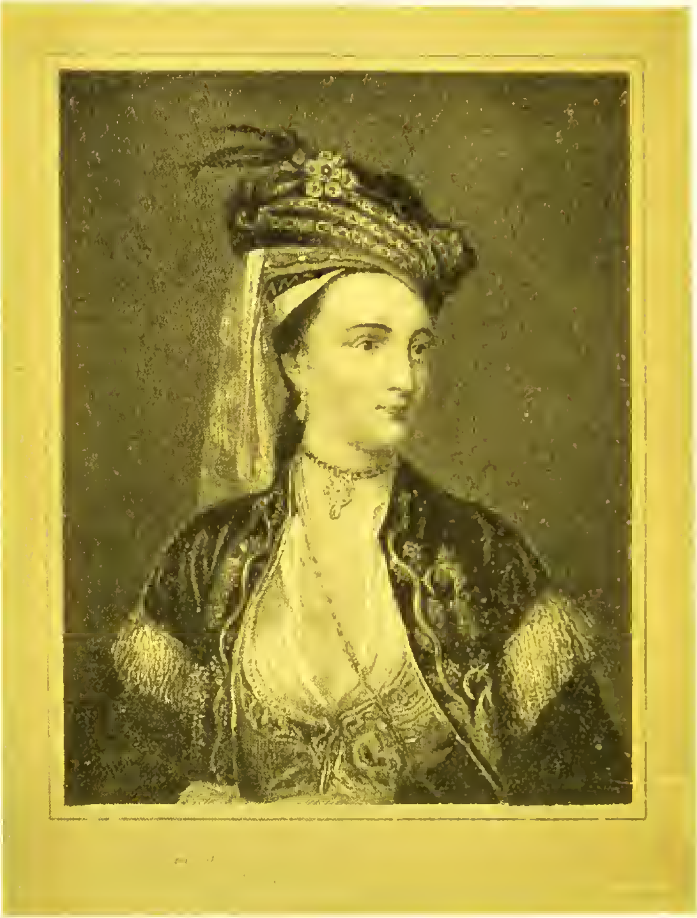
From well-authenticated statements it would appear that a method of inoculation for smallpox, similar to that employed in the East, was known and practised in the British Isles for a considerable period. How, and by whom, it was introduced into Britain we have not been able to trace, but apparently as early as the seventeenth century it was practised in Wales, and was called "buying the smallpox."

According to Williams, writing in 1722, the peasantry in Pembrokeshire had carried on the custom from time immemorial, by rubbing the matter taken from pustules that were ripe on several parts of the skin of the arm, or pricking the parts with pins that had been first infected with the matter. The writer declares, "I cannot hear of one instance of their having the smallpox a second time." He further states, "There is a married woman in the neighbourhood of this place who practised it on her daughter about a year and a half ago, by which means she had the smallpox favourably, and is now in perfect health, notwithstanding she has, ever since, without reserve, conversed with such as have had that distemper this last summer."

School-boys in the district are said to have even inoculated themselves in this way.

An old Welsh custom

Further evidence of the practice in Wales is recorded by a surgeon named Wright, of Haverfordwest. Writing in 1722, he refers to it as "a very antient custom, commonly called 'buying the smallpox,' which I find to be a common practice, and of very long standing. In two large villages near Milford Haven, named St. Ishmaels and Marloes, the oldest inhabitants declared it had been a common practice with them time out of mind, and one, William Allen, who was at that



LADY MARY WORTLEY MONTAGU

Daughter of Evelyn, Earl of Kingston

Born 1689 Died 1762

time ninety years of age, stated that it had been known and used throughout his life, and that he very well remembered his mother telling him it had been commonly done all her time, and that she got the smallpox that way."

There is evidence that in the Highlands of Scotland a method of smallpox inoculation was known about the same period. It was performed by charging worsted threads with the variolous matter, and tying them round the wrists. In the Island of St. Kilda it was customary to rub the matter on the skin of the elbow joint until it was absorbed.

In Scotland

In Ireland, the first record of the practice appears to be in 1723, when a medical practitioner in Dublin introduced it. During that year and the three following, twenty-five persons in all were inoculated, three of whom are said to have succumbed to the disease, and consequently the practice fell into disuse.

In Ireland

In England, there is no credible record of the practice before its introduction by Lady Mary Wortley Montagu, the wife of the British Ambassador to the Ottoman Court in 1717. The accounts of the practice in Turkey, which had been published in the *Transactions of the Royal Society*, by Timoni and Pylarini, in 1713, had caused but little interest, and it was only through the persistent efforts and enthusiasm of Lady Mary, who, to prove its efficacy, had her son inoculated, that serious attention was again directed to the matter in England.

In England

The famous letter which she wrote to her friend, Miss Sarah Chiswell, in 1717, in which she expressed her determination to persuade the physicians of London to practise inoculation, is worthy of quotation in full:—

"Apropos of distempers," she wrote, "I am going to tell you a thing that I am sure will make you wish yourself here. The smallpox, so fatal and so general amongst us, is here entirely harmless by the invention of *ingrafting*, which is the term they give it. There is a set of old women who make it their business to perform the operation every autumn in the month of September, when the great heat is abated. People send to one another to know if any of their family has a mind to have the smallpox. They make parties for this purpose, and when they are met (commonly fifteen or sixteen together), the old woman comes with a nutshell full of the matter of the best sort of smallpox, and asks what veins you please to have opened. She immediately rips open that you offer to her with a large needle (which gives you no more pain than a common scratch), and puts into the vein as much venom as can lie upon the head of her needle, and after binds up the little wound with a hollow bit of shell; and in this manner opens four or five veins. The Grecians have commonly the superstition of opening one in the middle of the forehead, in each arm, and on the breast, to mark the sign of the cross; but this has a very ill effect, all these wounds leaving little scars, and is not done by those that are not superstitious, who choose to have them in the legs, or that part of the arm that is concealed. The children or young patients play together all the rest of the day, and are in perfect health to the eighth. Then the fever begins to seize them, and they keep their beds two days, very seldom three. They have very rarely above twenty or thirty in their faces, which never mark; and in eight days' time they are as well as before their illness. Where they are wounded, there remain running sores during the distemper, which I don't doubt is a great relief to it. Every year thousands undergo this operation; and the French Ambassador says pleasantly that they take the smallpox here by way of diversion, as they take the waters in other countries. There is no example of any one that has died in it, and you may believe I am very well satisfied of the safety of the experiment, since I intend to try it on my dear little son. I am patriot enough to take pains to bring this useful invention into fashion in England; and I should not fail to write to some of our doctors very particularly about it, if I knew any one of them that I thought had virtue enough to destroy such a considerable branch of their revenue for the good of mankind. But that distemper is too beneficial to them not to expose to all their resentment the hardy wight that should undertake to put an end to it. Perhaps if I live to return, I may, however, have courage to war with them. Upon this occasion admire the heroism in the heart of your friend."

Lady Mary was not long before she carried her decision into practice, and persuaded Dr. Maitland, who was surgeon to the Embassy in Constantinople, to procure some variolous matter from a suitable subject and to obtain the services of a woman, who was experienced in the practice of inoculation, to use it. In March, 1717, the inoculator, who was an aged Greek woman of Pera, came to the Embassy to meet Maitland, who had the matter ready. In his account of the operation he says: "The good woman went to work so awkwardly and by the shaking of her hand put the child to so much torture with her blunt and rusty needle that I pitied his cries, and therefore inoculated the other arm with my own instrument with so little pain that he did not even complain of it." The disease followed in due course, with the result of over a hundred pustules.

The Eastern method introduced

Thus, for the first time, the Eastern method of inoculation was performed on a British subject, an innovation due to the courage of Lady Mary Wortley Montagu, who practically risked her son's life for the purpose.

Four years later, an essay, entitled "A Dissertation on the Method of Inoculating the Smallpox," was published by Dr. De Castro, who advocated arm-to-arm variolation. He recommended physicians to introduce the practice into England, as he found it had always been attended by success.

Shortly after this Dr. Harris delivered a lecture before the Royal College of Physicians in London, in which he described the Byzantine and Chinese methods of inoculation. He also called attention to the method then used at Aleppo of inoculating by means of a thread which had been dipped in the variolous matter, which had been used with success upon four children of the French Consul in that city.

Lecture on Byzantine and Chinese methods

Meanwhile, Lady Mary Wortley Montagu had not been idle, and still enthusiastically carried on her crusade. The inoculation of her son in Constantinople having been successful and attended by no ill effects, in April, 1721, she decided to have her baby girl, a child three months old, inoculated in the same way. She was staying in England at the time, and Dr. Maitland, who had been present at the inoculation of her son, being also in this country, consented to carry it out, and the operation was done in the presence of several of the Court physicians.

In the following year Maitland inoculated the son of Dr. Keith, with favourable results.

The subject excited considerable interest at the time throughout the country and was much commented upon, but the British public, ever conservative in adopting new customs, still regarded the practice with suspicion, and a certain amount of dread, and so for a time it made little progress.

In August, 1722, a suggestion was made to inoculate some criminals, then undergoing imprisonment in Newgate, with variolous matter, and those who submitted were promised a full pardon. Several accepted the offer, and six men were accordingly inoculated by Maitland under the direction of Sir Hans Sloane, on August 9, 1722. Maitland's method of inoculation was to make an incision through the cutis, and apply pledgets

Experiments on criminals

which had been steeped in the variolous matter from ripe pustules. None of the men suffered severely, and only sixty pustules appeared on the one on whom the inoculation produced the most effect. A seventh criminal, named Elizabeth Harrison, a girl of about eighteen years of age, was next experimented on by Dr. Mead, who used the Chinese method of inoculation. It was followed by a mild type of the disease, accompanied by severe pains in the head from the commencement of the eruption, but the girl made a good recovery.

Inoculation of forty individuals in Yorkshire

During the next six months Maitland inoculated only eight persons, but Nettleton, a medical practitioner of Halifax, Yorkshire, who became an enthusiastic believer in the practice, inoculated forty individuals in three months. His method was to first prepare the patient by the administration of a course of aperients, emetics and occasional bleeding. When inoculating, he made two incisions, one in the arm, and one in the leg on the opposite side of the body, and dropped the variolous matter into them. With his later patients he employed another method, which consisted in impregnating cotton wool with the variolous pus, and applying it to the incision for twenty-four hours.

Royal children inoculated

Towards the close of the year 1722, public attention was again drawn to the subject by the announcement that the Princess of Wales had ordered five charity children of the parish of St. James's to be inoculated. The results were successful, and this decided the Princess to have her two young children operated upon in the same way. Although a mild attack of the disease followed, no serious results of the operation occurred, and the practice, thus encouraged by royal favour, received a fresh impetus.

This, however, was soon checked by the announcement of the death of the Hon. William Spencer, and several other cases which terminated fatally from smallpox after inoculation.

Opposition to the practice now sprang up both from physicians and clergymen, who spoke and wrote against it, and a heated controversy speedily developed. The clergy declared the custom to be the outcome of quackery, atheism and avarice, and one divine who preached against it, stigmatised it as "a dangerous and sinfull practice." Maitland, especially, was taken to task in connection with the fatal results which had attended so many persons he had inoculated. To these criticisms the supporters of inoculation replied, and a vigorous discussion followed in the press and in the form of .pamphlets published by exponents on both sides.

Opposition to the practice

Notwithstanding this, however, the practice continued to make steady progress in England. Jurin, who published some letters on the subject at this time, stated that, in accordance with statistics, among children born, one in fourteen died in after life from smallpox if uninoculated, while of the inoculated persons only one out of ninety-nine succumbed to the disease. He qualified his recommendation by stating that care should be taken only to inoculate those "who were of good habit of body," and apparently free from any disease.

In 1746, an Inoculation Hospital was established in London, although prejudice still ran high against the practice. Patients, on leaving the hospital, it was said, were often abused and followed in the street by the anti-inoculators, and many had even to remain in the building until night, unable to leave on account of the danger of insult and assault in the streets.

Inoculation Hospital established

In 1747, Dr. Mead, who was at that time at the zenith of his fame as a fashionable and popular physician, published an article in favour of the practice.

and, on behalf of the church, Dr. Maddox, then Bishop of Worcester, also become a powerful supporter of inoculation, and preached a sermon on the subject, which was published and attained considerable popularity.

Inoculation of Prince Edward

At the beginning of the year 1754 public attention was aroused by the announcement that the Prince of Wales had been stricken down by smallpox, and, on the advice of the Court physicians, it had been decided to inoculate Prince Edward and Princess Augusta with variolous matter taken from the royal patient.

This aroused a fresh controversy on the vexed question, and, after some consideration, the following manifesto was published by the Royal College of Physicians in 1754:—

Manifesto by Royal College of Physicians

"The College, having been informed that false reports concerning the success of inoculation in England have been published in foreign countries, think proper to declare their sentiments in the following manner, viz.: That the arguments which at the commencement of this practice were urged against it have been refuted by experience; that it is now held by the English in greater esteem, and practised among them more extensively than ever it was before, and that the College thinks it to be highly salutary to the human race."

In 1757, interest was again revived in the subject by the announcement of a new method of operation, discovered by Robert Sutton, an unqualified practitioner, who soon achieved considerable fame as a successful inoculator. Sutton lived at Debenham, Suffolk, and the success attending his inoculations soon spread throughout the country, insomuch that in the course of eleven years it is stated that he inoculated 2,514 individuals. His practice so increased that he trained his two sons, Robert and Daniel, to assist him, and they eventually opened an Inoculation House near Ingatestone, in Essex, where patients became so numerous that it was difficult to accommodate them in the village.

Sutton claimed that by the use of certain medicines and treatment, he was enabled to keep the disease contracted after inoculation entirely under his control, and maintained that no fatal results had ever ensued from his method. The details of this he kept a profound secret, and, as his fame increased, so the envy of the physicians of the period was aroused, and every effort was made to try and find out the secret of his success. Samples of the medicines he prescribed were with difficulty obtained, and subjected to analysis both by physicians and chemists, and his patients were plied with all kinds of interrogations after they had passed from under his care, but all without avail. In the end he agreed to communicate his method to any practitioner at a distance away from where he lived, on condition that he received half the profits that accrued, and thus eventually his method became known.

Sutton's method

Patients who desired to be inoculated by him were first kept on a strict dietary for a fortnight, and a certain powder together with a dose of purging salts was administered during this time. His method of inoculation, as given by himself, was to take a lancet charged with the smallest possible quantity of the unripe, crude or watery matter from the pustules, and then insert it under the cuticle obliquely in the outer part of the arm, between the scarf and the true skin, barely sufficient to draw blood and not deeper than the sixteenth part of an inch. The raised skin was then pressed down by the finger without further application of plaster or bandages. He considered patting or daubing of the matter over the punctured place as unnecessary.

Dietetic and medicinal preparation for inoculation

Dr. Dimsdale, who afterwards achieved fame as an inoculator in Russia, as already related, was one of the first to turn Sutton's method to account, and, with some slight alteration, he practised it with great success. Previously, he had applied a piece of thread which had been drawn through a ripe pustule, and well moistened with the matter, to an incision made in one or both arms, but this method he abandoned for one adapted from Sutton's. For nine or ten days before the operation his patients were enjoined to abstain from all animal food and fermented liquor, and to live on a low diet. During this time they were dosed with a powder composed of eight grains of calomel, eight grains of compound powder of crab's claws, and one-eighth part of a grain of tartar emetic. Three doses of this powder were given, one at the commencement of the treatment, the second in three or four days, and the third about the eighth or ninth day.

Adopted by Dr. Dimsdale

In 1766, Burgess called attention to the necessity of preparing the patient, before inoculation, by means of purgatives.

The practice of direct inoculation, however, was still regarded with suspicion by the majority of people, owing to its uncertainty, and it gradually became evident that not only did it fail to exterminate the disease, but actually spread it, and in many cases smallpox was introduced by inoculation into towns which had been free from the natural disease.

There can be no doubt that inoculation lessened the virulence, and, to some extent, diminished the dangers of an attack of smallpox, but smallpox still continued, and, as no precautions against infection were taken, each case only served to spread the disease. One of Maitland's earliest cases, a child of the name of Mary Butt, is said to have infected six servants who had attended her; and in the report of a case recorded by Willan,

Effects of inoculation

of a child whose parents kept a shop in a court consisting of about twenty houses, it is stated that the disease was contracted by seventeen persons who had frequented the shop within a fortnight of the child's recovery, and eight of them died from the disease.

Gradually the practice fell into disuse, and disappeared on the advent of vaccination, direct inoculation by smallpox matter being finally forbidden by Act of Parliament in 1840.

CHAPTER IV

THE GENESIS OF VACCINATION

In studying the history of medicine one cannot fail to notice how much we owe to antient customs which have come down to us from traditions of the past, and how many so-called modern discoveries are but re-introductions of practices of remote antiquity.

Cowherd tradition

Thus it was from the old traditions of ignorant cowherds and dairy-maids that the theory of vaccination of the human being with cowpox as a preventive of smallpox was evolved. From an unknown period farm hands, who had had the care of cattle, had known of a disease among cows which was called "cowpox," and were aware that they were liable to contract the complaint from the animal, especially when milking. It had further been noticed that those who had had the cowpox were not susceptible to the dreaded smallpox, which was so prevalent in England a century or more ago.

Dr. Corlett states that in the time of Charles II, the court ladies and other devotees of fashion looked with envy upon the immunity enjoyed by some of the dairy-maids in Gloucestershire to the pitting of smallpox.

He relates the following curious story of the Duchess of Cleveland (1670), who, it is well known, was a favourite with the king, and celebrated for her great beauty. When joked by the courtiers on the possible loss of her position at court through the disfigurement of smallpox, she is said to have replied that she had nothing to fear, for she had had cowpox.

In Ireland, according to Barry, cowpox had been known as long as smallpox, and about 1750, an aged woman, eighty years of age, stated that she was certain that as long as she could remember the opinion had prevailed that people who had had the cowpox could

BENJAMIN JESTY
From the original oil painting

not take the smallpox, and that many purposely exposed themselves to the former, to protect themselves from smallpox.

This tradition, however, does not appear to have been universal, and in some parts of the country it appears to have been unknown. Jenner believed that it arose as the result of smallpox inoculation, and that the failure in attempting to inoculate smallpox on those who had recently contracted cowpox gave rise to gossip among those who were employed in dairies, and laid the foundation of the popular tradition.

In 1769, Jobst Böse, a Government official in Germany, called attention to the fact that those who had suffered from cowpox, were believed to be protected from smallpox. He states: "I am reminded of the not unknown attacks of cowpox which were prevalent in this country, and to which to this day milkmaids are subject. In passing, I wish to remark that in this country those who have had the cowpox flatter themselves to be entirely free from all danger of getting smallpox, and assert, as I myself, to have heard this same statement made by entirely reliable persons."*

The first record of the tradition being put into practical use is recorded in the papers of Mr. Nash, a medical practitioner who died in 1785, among which were found the following observations:—

"I never heard of one having the smallpox who ever had the cowpox. The cowpox certainly prevents a person from having the smallpox. I have now inoculated about sixty persons, who have been reported to have had the cowpox, and I believe at least forty of them I could not infect with the variolous virus. The other twenty, or nearly that number, I think it is very reasonable to presume (as they were no judges), had not the real cowpox. It is not my own opinion only, but that of several other

First practical use of the tradition

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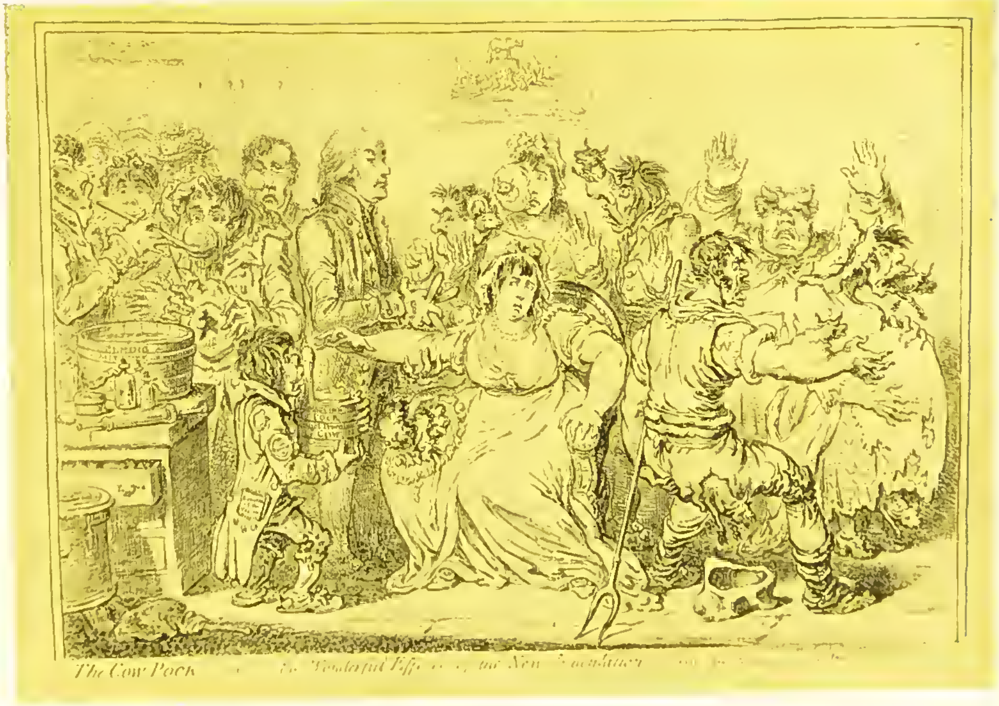
* "General Conversations of Göttingen," Part 39, May 24, 1769



"THE COWPOX: OR, THE WONDERFUL EFFECTS OF THE NEW INOCULATION"

From a caricature. 1802

medical gentlemen, that convinces me the cowpox is a prophylactick for the smallpox. My principal intention in publishing being to recommend to the world a method of inoculation that is far superior in my opinion (and I judge it from experience) to any yet made known; therefore I hope and trust, although I have no medical friend to enforce it upon the world, that they will give me so far credit for my assertions as to make the experiment, and then it will sufficiently introduce itself."

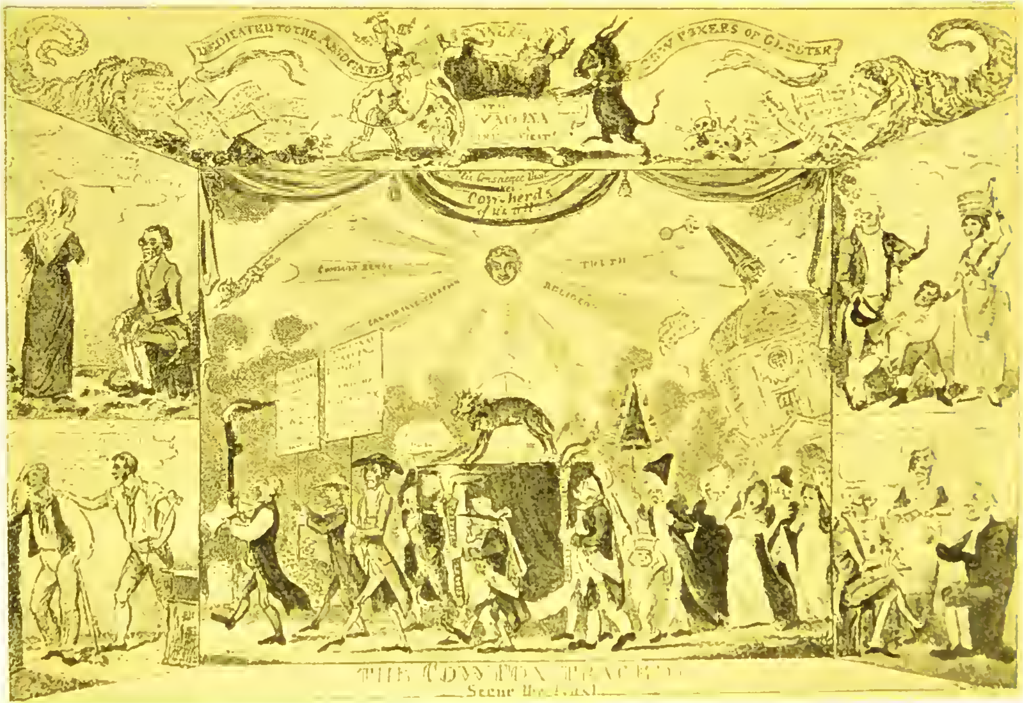
These notes of Nash's were written about the year 1781, and after his death were passed to a Mr. Thomas Nash, and from him to Mr. Robert Keate. According to Crookshank, Jenner was acquainted with Nash.

Rolph's experiences

Another observer who was well acquainted with cowpox was Rolph, who practised for nine years in Gloucestershire about this period. He had noted that out of hundreds of cases that had come under his observation, not a single one had proved either dangerous or fatal. He also states: "There is not a medical practitioner of even little experience in Gloucestershire, or scarce a dairy farmer, who does not know from his own experience, or that of others, that persons who had suffered from cowpox are exempted from the agency of the variolous poison."

Downe records that cowpox inoculation was practised in several cases with success as early as 1771, and he relates the case of a butcher near Bridport, who was inoculated with cowpox matter, by means of a needle, in two or three places on his hand. He afterwards came repeatedly into contact with persons suffering from smallpox, but never contracted the disease.

One of the most interesting incidents, however, in the history of cowpox inoculation is that of Benjamin Jesty, a farmer living at Yetminster in Dorset, who carried on a large business as a cattle dealer. In



"THE COWPOX TRAGEDY"
From a caricature by G. Cruikshank, 1812

A farmer inoculates his family with cowpox

the year 1774 he inoculated his wife and three of his children with cowpox matter. Mrs. Jesty was inoculated in the arm under the elbow, and her sons above the elbow, the incision being made with a darning needle, and the virus taken on the spot from the cows of a farmer at Chittenhall, whither Jesty had taken his family. The sons developed the disorder in a favourable way, but Mrs. Jesty's arm became much inflamed.

As Jesty's experiment became known, the boldness and novelty of it created great interest and caused quite a sensation in the neighbourhood.

The causes that led the country farmer to the idea of inoculation with cowpox matter may best be gathered from his own story, which he communicated to the Rev. Dr. Bell, of Swanage:—

"When the smallpox raged in the vicinity and inoculation was introduced into the village (Yetminster), alarmed for the safety of his family, he bethought himself of this expedient. There had been in his family two maidservants, who, after having the disorder from the cows, and knowing this to be a preventive of the smallpox, had attended, the one her brother, the other her nephew, in the natural smallpox, without taking the infection. This circumstance led Mr. Jesty to communicate by inoculation the disorder of the cows to his family. For this purpose he carried them to the field of a neighbouring farm, and, as has been related, performed the operation on the spot.

"To the other question, how did it happen that this discovery expired at its birth, a ready solution will be found in the character of the ingenious farmer whose pursuits were widely different from those of medicine, literature or science, and in the natural prejudice of mankind strengthened by the alarm which the inflammation of Mrs. Jesty's arm had excited. To such a height was this prejudice carried that a neighbouring surgeon, whose name I have not been able to learn, had almost lost his practice from the bare proposal of following up Mr. Jesty's bold and successful experiment."

Over thirty years afterwards this statement, duly attested, was forwarded to the Jennerian Society in London by Dr. Bell, and it was accepted as satisfactory evidence of Jesty's discovery. The Society invited him to pay a visit to the metropolis for the purpose of having his portrait painted, as the earliest inoculator of cowpox. The worthy farmer accepted the invitation, and, accompanied by his son Robert, whom he had inoculated in 1774, he journeyed to London. According to an account of the visit, written at the time, the pair "met with great attention from the members of the Society, who were much amused with Jesty's appearance and manners. Before he left his country home his family had tried to induce him to attire himself more fashionably for his visit to the metropolis, but without effect. 'I do not see,' said the bluff old farmer, 'why I should dress better in London than in the country,' and so he appeared before the Jennerian Society in his country farmer's clothes, which are described as being peculiarly old-fashioned. In order to prove their statement, Robert Jesty willingly consented to be inoculated for the smallpox, and his father for the cowpox, but neither took effect."

The earliest inoculator of cowpox

Jesty was then invited to sit for his portrait to Mr. Sharpe, an artist, and the picture, when finished, was to be presented to him. But the old farmer proved an impatient sitter, and could only be kept quiet by the artist's wife playing to him on the piano. The portrait when completed was presented, together with a pair of very handsome gold-mounted lancets, to Jesty, and the members of the Jennerian Society signed the following statement, which accompanied the presentation:—

"Mr. Benjamin Jesty, farmer, of Downshay, in the Isle of Purbeck, having visited the original Vaccine Pock Institute, Broad Street, Golden Square, London, in August, 1805, we think it a matter of justice to himself, and beneficial to the public, to attest that among other facts he has afforded decisive evidence of his having vaccinated his wife and two sons, Robert and Benjamin, in the year 1774, who were thereby rendered unsusceptible of the smallpox, as appears from the exposure of all the parties to that disease frequently the whole course of thirty-one years."

Thus, through Jesty's visit to London, he satisfactorily established his claim as the first inoculator for cowpox. He died in 1816, and was buried in the churchyard of Worth Matravers, near Swanage, and his tombstone bears the following inscription:—

Sacred
To the Memory
of
BENJ$^{N.}$ JESTY (of DOWNSHAY)
Who departed this life
April 16th, 1816
Aged 79 years

He was born at Yetminster in this County, and was an upright Honest man; particularly noted for having been the first Person (known) that introduced the Cow Pox by inoculation, and who, from his great strength of mind, made the experiment from the Cow on his wife and two sons in the year 1774.

His wife, who was thus the first person known to have been intentionally inoculated with cowpox, lived to the age of eighty-four, died in the year 1824, and was buried by the side of her husband.

THE OLD VICARAGE, BERKELEY, WHERE DR. EDWARD JENNER
WAS BORN

CHAPTER V

THE DISCOVERER OF VACCINATION

The close of the eighteenth century saw the dawn of a new era in preventive medicine, by the discovery and establishment of the value of vaccination by Edward Jenner, whose name will ever be remembered as the vanquisher of smallpox, which for centuries before his time had ravaged the world.

He was born in the year 1749, at Berkeley, in Gloucestershire, and was the third son of the Rev. Stephen Jenner, the vicar of that place. At the period of Jenner's birth, inoculation was being vigorously advocated as a preventive of smallpox, and when he was but eight years of age, his parents having decided that he should be inoculated, he was promptly put under a preparatory regimen. "For six weeks," he tells us later, "he was bled and purged, and kept on a low diet, and dosed with medicine, and was then removed to one of the so-called inoculation stables, and haltered up with others in a terrible state of disease." Jenner was fortunate to escape with a mild attack, but it affected his health for many years afterwards, and it is probable that the experience he then went through made such an impression upon his mind that he eventually began his investigations on the prevention of the disease.

Edward Jenner

At the age of thirteen he decided to follow the profession of medicine, and was apprenticed by his father to Messrs. Ludlow, a firm of surgeons in Sodbury, near Bristol, with whom he remained for six years. It was during this period of his apprenticeship that one day a young country woman came to seek medical advice, and, the subject of smallpox having been mentioned, she exclaimed, "I cannot take it, for I have had cowpox." Her reply seemed to have made a deep impression on Jenner, and doubtless set him thinking as to why this should be.

DR. EDWARD JENNER

From an engraving by W. Read

Apparently he never forgot it, but marked it out for a new line of research.

Pupil of John Hunter

On attaining his majority, he came to London and entered as a house pupil with the famous John Hunter, and assisted him in forming his museum. It is said that he often discussed the subject of smallpox with the great anatomist, and on one occasion when relating his hopes and fears of the possibility of substituting vaccination for inoculation, the characteristic reply of the great surgeon was: "Don't *think*, Jenner, but *try*."

Tiring of town life, he resolved, after a time, to return to his native village, and there he settled down as a country practitioner, occasionally visiting Cheltenham, where, on account of his London experience, he was sometimes called in consultation by local practitioners.

Hunter's letter to Jenner

During his early days in Berkeley, about 1778, he wrote to John Hunter, telling him that he had unfortunately fallen in love, and he regretted to inform him that his suit did not prosper. Hunter's amusing reply, in which he recommends his old pupil to study hedgehogs as a cure for love-sickness, is characteristic of the man. It was as follows:—

"Dear Jenner,—I own I was at a loss to account for your silence, and I was sorry for the cause. I can easily conceive how you feel, for you have two passions to contend with, viz., that of being disappointed in love, and that of being defeated; but both will wear out, perhaps the first soonest. I own I was glad when I heard you were to be married to a woman of fortune; but let her go, *never mind her*. I shall employ you with hedgehogs, for I do not know how far I may trust mine. I want you to get a hedgehog in the beginning of winter, and weigh him, put him in your garden, and let him have some leaves, hay, or straw, to cover himself, which he will do, then weigh him in spring, and see what he has lost. Secondly, I want you to kill one at the beginning of winter, to see how fat he is;

and another in spring, to see what he has lost of his fat. Thirdly, when the weather is very cold, and about the month of January, I could wish you would make a hole in one of their bellies, and put the thermometer down into the pelvis, and see the height of the mercury; then turn it upwards towards the diaphragm, and observe the heat there. So much at present for hedgehogs. London, 1778."

Some years later, Jenner married a Miss Kingscote, and his married life was a long and happy one.

In the year 1780, he determined to take up the study of cowpox, and in the month of May in that year he first disclosed to his friend Edward Gardner his future hopes respecting the great object of his pursuit.

Jenner described

Describing his personal appearance about this time, Gardner says: "He was rather under middle size, but robust, active and well formed. He was particular in his dress, and when I first met him at Frampton Green, he was clad in a blue coat with yellow buttons, buckskins, well-polished jockey boots with handsome silver spurs, and carried a smart whip with a silver handle. His hair, after the fashion of the time, was done up in a club, and he wore a broad-brimmed hat."

Jenner confides in Gardner

One can readily picture Jenner and his friend as they rode together on the road between Gloucester and Bristol, when the following conversation took place. After relating the natural history of cowpox, Jenner gave his opinion as to its origin from the heel of the horse, specifying the different kinds of disease which attacked milkmen when they handled infected cows. He dwelt upon that variety which afforded protection against smallpox, and with deep and anxious emotion mentioned his hope of being able to propagate that variety from one human being to another, until he had disseminated the practice all over the globe to the total extinction of the dread disease. "Gardner," he concluded, addressing his

DR. EDWARD JENNER INOCULATING HIS SON, EDWARD, AT THE AGE OF EIGHTEEN MONTHS, WITH SWINEPOX MATTER, NOVEMBER, 1789 friend, "I have entrusted a most important matter to you, which I firmly believe will prove of essential benefit to the human race. I know you, and should not wish what I have stated to be brought into conversation, for should anything untoward turn up in my experiments I should be made, particularly by my medical brethren, the subject of ridicule, for I am the mark they all shoot at."

It was about this period Jenner came to the conclusion that the grease of horses, a disease well known to farriers, was the same as cowpox and smallpox. One day, accompanied by his nephew, George Jenner, when looking at a horse with diseased heels, he exclaimed, pointing to the infected part, "There is the source of smallpox. I have much to say on that subject, which I hope in due time to give to the world."

"Grease" and smallpox

He satisfied himself that two forms of disease had been hitherto confounded under the name of cowpox, only one of which protected against smallpox. Many cases of failure, he judged, were thus to be accounted for. His next step was to ascertain that the true cowpox itself only protects when communicated at a particular stage of the disease.

Just at this time, however, there was little opportunity of studying cowpox in that part of Gloucestershire. Few cases had been seen, and he had no opportunity of inoculating the disease, and so putting his theories to the test. But he steadily pursued his investigations, and in 1788 he had a drawing made of the hand of a milkmaid with cowpox, which he took with him to London to show Sir Everard Home, who agreed that it was interesting and curious, and the subject began to be talked about in medical circles in London.

While deliberating on the subject of vaccine inoculation, he made some experiments on swinepox, which he believed to be of similar origin to common variolæ. In November, 1789, he inoculated his son

Edward, who was then about eighteen months old, with some swinepox matter which he had collected. He watched the result with the greatest anxiety and interest, and noted that the progress of the disease seemed similar to that arising from the insertion of true smallpox when the attack was slight. No harm apparently resulting to the boy, on April 7, 1791, he inoculated him again, and although a vesicle appeared and there was some erysipelas, it quickly died away, and the child showed no sign of indisposition the whole time.

Jenner's theories tested

In 1796, an excellent opportunity occurred for an important experiment. Cowpox broke out in a farm near Berkeley, and a dairymaid named Sarah Neames contracted the disease. Jenner seized the opportunity and resolved to put his theories to a practical test, and on May 14 he took some matter from a sore on the maid's hand, and inserted it by means of superficial incisions into the arm of James Phipps, a healthy boy about eight years of age. The inoculation succeeded, the result being described as similar to that produced by inoculation with variolous matter. The whole died away, leaving scabs, and subsequent eschars. After a period of six weeks had elapsed, Jenner determined to try the effect of variolous inoculation, and on July 1 he inoculated the boy with variolous lymph by means of punctures and slight incisions, and was delighted to see that no smallpox followed.

These results he communicated in the following letter to Gardner:—

"Dear Gardner,—As I promised to let you know how I proceeded in my inquiry into the nature of that singular disease, the cowpox, and, being fully satisfied how much you feel interested in its success, you will be gratified in hearing that I have at length accomplished what I have been so long waiting for, the passing of the Vaccine Virus from one human being to another by the ordinary mode of inoculation.

"A boy of the name of Phipps was inoculated in the arm from a pustule on the hand of a young woman who was infected by her master's cows. Having never seen the disease but in its casual way before, that is, when communicated from the cow to the hand of the milker, I was astonished at the close resemblance of the pustules, in some of their stages, to the variolous pustules. But now listen to the most delightful part of my story. The boy has since been inoculated for the smallpox, which, as I ventured to predict, produced no effect. I shall now pursue my experiments with redoubled ardour.—Believe me, yours very sincerely, Edward Jenner, Berkeley, July 19, 1796."

To confirm his experiments, and make his discovery certain, he resolved to repeat it before publishing the facts to the world. But again, the disappearance of cowpox in the dairies delayed him, and in the meantime he resolved to prepare a paper on the subject to send to the Royal Society.

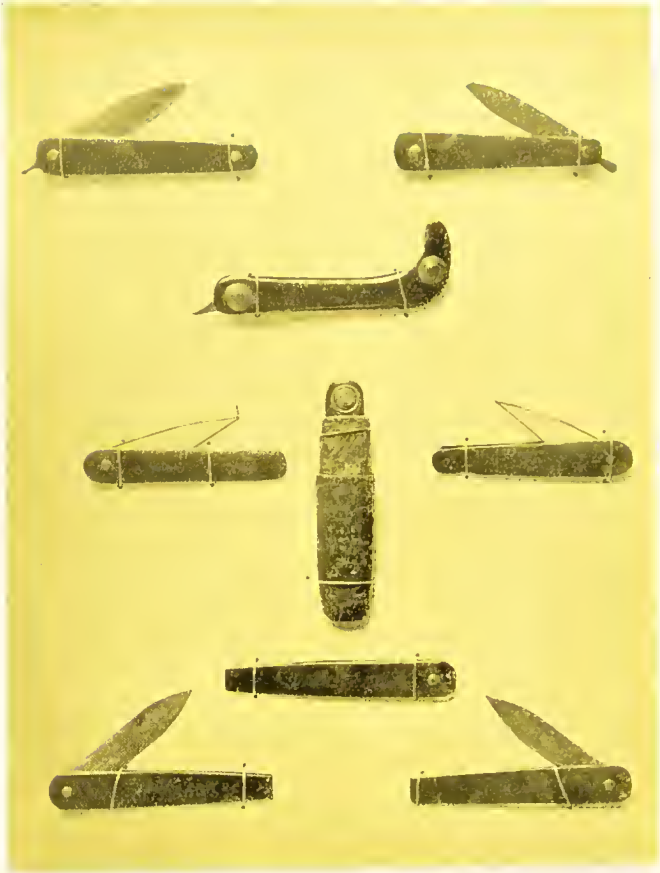
Early in the year 1797, owing to an outbreak of cowpox, an opportunity again occurred, and he inoculated three other persons with success. He then completed his paper, and revised it for publication.

Jenner publishes his paper

He first transmitted the manuscript to the Royal Society, and it was submitted to the Council, but after some time was returned to him, as they apparently thought the evidence was not strong enough to warrant publication in their *Transactions*. Jenner, undaunted, resolved to publish the paper himself, and about the end of June, 1798, it was printed, with additions, in the form of a pamphlet, entitled:

"Inquiry into the Causes and Effects of the Variolæ Vaccinæ, a Disease discovered in some of the Western Counties of England, particularly Gloucestershire, and known by the name of the Cowpox."

In this historic pamphlet, which led to such important results, Jenner begins by describing the disease of the horse called by farriers, "the grease," which he



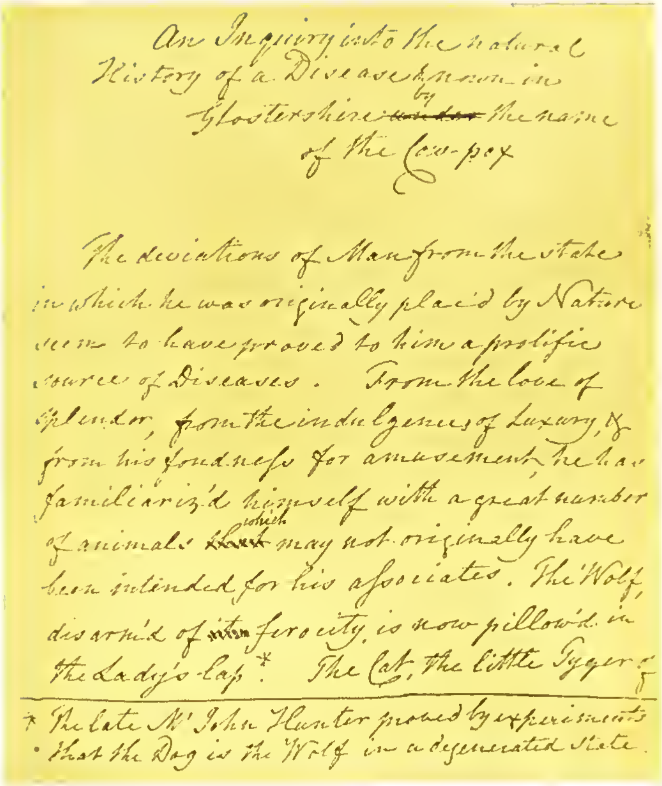
Two Ivory Scarifiers and Seven Lancets used by Dr. Jenner in his First Experiments describes as "an inflammation and swelling in the heel, from which issues matter possessing properties of a very peculiar kind. It is capable of generating a disease in the Human Body (after it has undergone the modification which I shall presently speak of) which bears so strong a resemblance to the smallpox, that I think it highly probable it may be the source of that disease. . . . . In this dairy country," he continues, "a great number of cows are kept. The office of milking is here performed indiscriminately by both Men and Maid-servants. One of the former having perhaps been appointed to apply dressings to the heels of a Horse affected with the Grease, and not paying due attention to cleanliness, incautiously bears his part in milking the cows, with some particles of the infectious matter adhering to his fingers. Should this be the case, it commonly happens that a disease is communicated to the Cows, and from the Cows to the Dairy-maids, which pretty rapidly spreads until most of the cattle and domestics of the farm feel its unpleasant consequences."

Its contents summarised

Jenner thus accounts for the origin of cowpox, the characters of which he then describes in detail. He assumed that virus from the horses' heels was intensified by being passed through the cow, on the ground that the horse so rarely affects his dresser with sores, while a milkman rarely escapes infection from the cow.

While in London concerning the publication of the pamphlet, Jenner called on Mr. Cline, and left with him some of the cowpox virus for trial. Having a young patient suffering from an affection of the hip joint, Cline thought that the counter irritation excited by the cowpox might prove beneficial, and in July, 1798, he inserted some of it into the patient's hip by means of two punctures. The result corroborated Jenner's experiments, the child sickened on the seventh day, and the fever subsided on the eleventh. The patient was

Independent confirmation



An Inquiry into the natural
History of a Disease known in
Glostershire ~~under~~ by the name
of the Cow-pox

The deviations of Man from the state in which he was originally plac'd by Nature seem to have proved to him a prolific source of Diseases. From the love of splendor, from the indulgences of Luxury, & from his fondness for amusement, he has familiariz'd himself with a great number of animals ~~that~~ which may not originally have been intended for his associates. The Wolf, disarm'd of ~~its~~ ferocity, is now pillow'd in the Lady's lap.* The Cat, the little Tyger of afterwards inoculated with smallpox matter in three places without contracting the disease, and Cline, writing on August 2, 1789, states: "I think the substitution of cowpox poison for smallpox promises to be one of the greatest improvements that has ever been made in medicine. The more I think on the subject, the more I am impressed with its importance."

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* The late Mr John Hunter proved by experiments that the Dog is the Wolf in a degenerated state.

FIRST PAGE OF JENNER'S ORIGINAL MANUSCRIPT FOR HIS PAMPHLET:

"An inquiry into the natural history of a disease known in Glostershire by the name of the Cowpox"

Jenner's critics

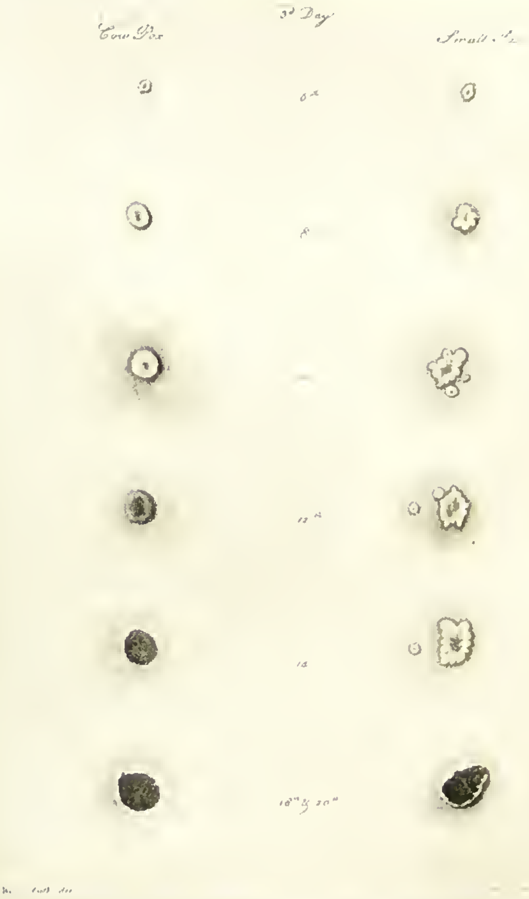
Ingenhousz, a well-known physician and scientist of the time, was the first critic of Jenner's discovery. In the autumn of the same year he opposed the cowpox theory, and cited certain cases where smallpox had been contracted after inoculation by cowpox. Jenner recognised a formidable antagonist in Ingenhousz, whose criticism did a great deal to weaken Jenner's position. The leading scientific and medical men in London next took up the subject, and several questioned the accuracy of Jenner's observations, and stigmatised his doctrines as conjectural and ridiculous.

Others, such as Pearson and Woodville, although adopting Jenner's ideas, endeavoured to exploit them on lines of their own, which proved a failure. Their experiments were attended with somewhat serious results, and for a time stopped the progress of Jenner's work.

Both held important positions, being physicians to the Smallpox Hospital in London, and it is stated that the experiments they commenced to carry out on vaccination were so carelessly performed that they were practically useless. It was further said that the vaccine they used was actually disseminating the disease they wished to prevent.

Jenner comes to London

Jenner, hearing of this, and fearing that their failures would seriously rebound on him, decided to come to London, and in the early part of the year 1799 he came up to the metropolis. He at once set to work to rescue his discovery from destruction, and to expose the errors which had been committed by his imitators. He



Original Illustration for Jenner's "Inquiry," representing Cowpox and Smallpox Pustules on the Third Day of Eruption gathered around him a goodly band of enthusiastic supporters, and they set to work to counteract the evil done to their cause.

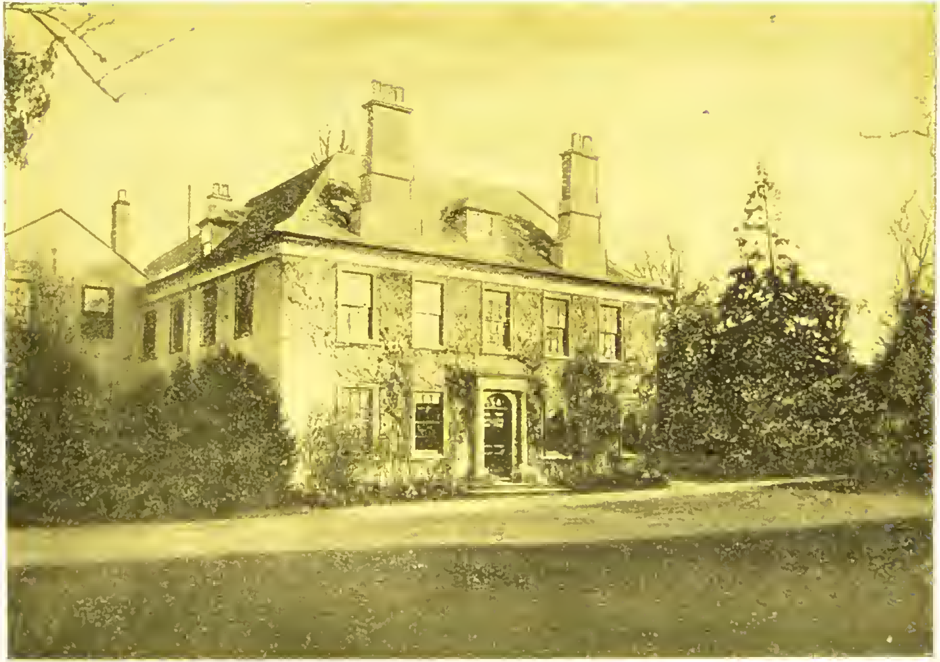
The word "vaccination" was the name first given in France to Jenner's method of cowpox inoculation. The method was based almost exactly on the earlier practice of inoculation, the cowpox matter being inserted under the skin of the arm by a lancet point. In 1799, Woodville started a succession of arm-to-arm vaccinations, so that the matter could be passed from one person to another with the same result. This method proving successful, it became commonly adopted in practice.

Meanwhile, Pearson, not to be outdone, decided to establish an institution of his own for the inoculation of cowpox, and appointed a Vaccine Board, of which he himself was the Principal, and the Duke of York consented to become a Patron. He wrote to Jenner offering to make him an "extra corresponding physician," but Jenner, thinking that sufficient consideration had not been shown to him in the matter, declined the offer.

Jenner now returned to Berkeley to complete a second paper on which he was engaged in reply to the criticism of his opponents, and shortly afterwards published it in the form of a pamphlet, entitled, "A Continuation of Facts and Observations relative to the Variolæ Vaccinæ."

Jenner introduced to Royalty

Soon after its publication he returned to London, and communicated with Lord Egmont, asking for an interview, so that "he might submit a plan by which the country might derive the advantages of his discovery, and profit by his advice." He also had audience with the Duke of Clarence, and eventually submitted a scheme for the establishment of a public institution for vaccine inoculation. He ultimately succeeded in inducing the Duke of Clarence and Lord Egmont to withdraw from



Chantry Cottage, Berkeley, where Dr. Edward Jenner Lived

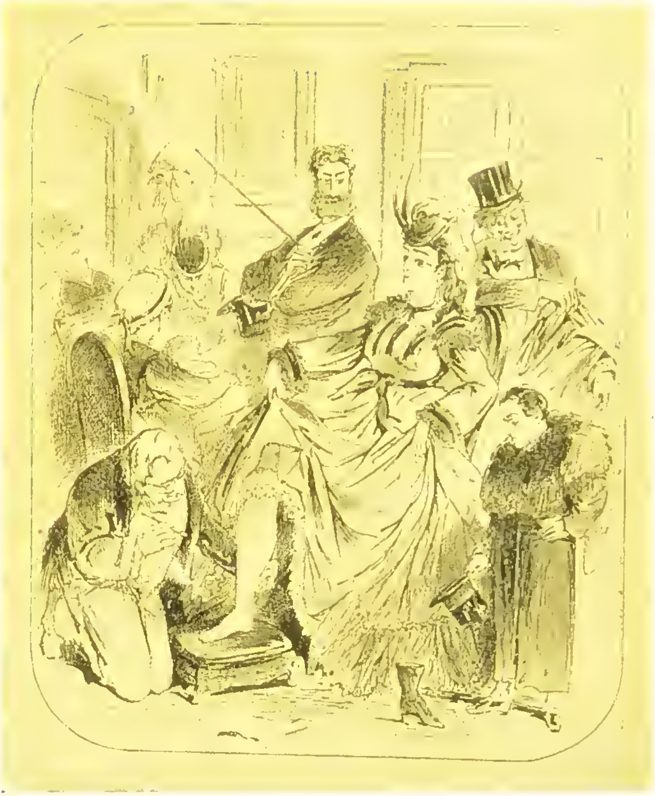
Pearson's projected institution, and was presented by Lord Berkeley to the King, the Queen, and the Prince of Wales, whose encouragement gave him fresh hope and materially aided the spread of the vaccination propaganda throughout the country.

Vaccination in America

The practice of vaccination was soon taken up in America, and was introduced and made known by Dr. Waterhouse, of Cambridge, Massachusetts, who published an article in the *Columbian Sentinel*, in March, 1797, entitled "Something Curious in the Medical Line." Thus, with characteristic enterprise, did the Americans grasp a discovery but just made in the land of its birth, and at a meeting of the American Academy of Arts and Sciences, presided over by John Adams, then President of the United States of America, the subject was attentively considered, and no time was lost in endeavouring to procure a supply of vaccine matter.

This was received in June, 1800, and, on July 8, Waterhouse vaccinated one of his sons, aged five years, this boy being the first person to be vaccinated in America. Finding the results successful as compared with Jenner's experience, he vaccinated several other members of his family, and also subjected them to smallpox inoculation afterwards. Finding the children resisted the disease even when subjected to the most crucial test, Waterhouse exclaimed, "One fact in such cases is worth a thousand arguments."

He was anxious that the benefits of vaccination should be diffused throughout the Continent, and his efforts attracted the attention of Thomas Jefferson, then President of the United States of America, who took a considerable interest in the subject. Jefferson had some of the members of his family vaccinated in August, 1801, and from his own family the President supplied Dr. Gantt with a small quantity of vaccine matter. Thus the seed of vaccination was planted at the capital of the United States.



VACCINATION

"Ah! doctor, I did well in not allowing myself to be vaccinated on the arm . . . it leaves a mark . . . and then my husband finds that I have a fine leg."

"He was not aware of it?"

"He!! Never!"

From a French caricature by Carlo Gripp

The propaganda next spread over the continent of Europe, and vaccination was demonstrated in Vienna by De Carro in 1799, and its importance once being realised, it was taken up with enthusiasm in Switzerland, France, Italy and Spain. In the latter country, the Government despatched an expedition in 1803 for the purpose of introducing vaccination throughout the Spanish possessions of the Old and New Worlds. The vessel in which the expedition sailed carried twenty-two unvaccinated children, who were to be vaccinated on the voyage in order to preserve the vaccine by passing it from arm to arm. In South America, in Sicily, and Naples, where smallpox was rife, it was received with great enthusiasm, religious processions being formed for the purpose of receiving "the blessed vaccine."

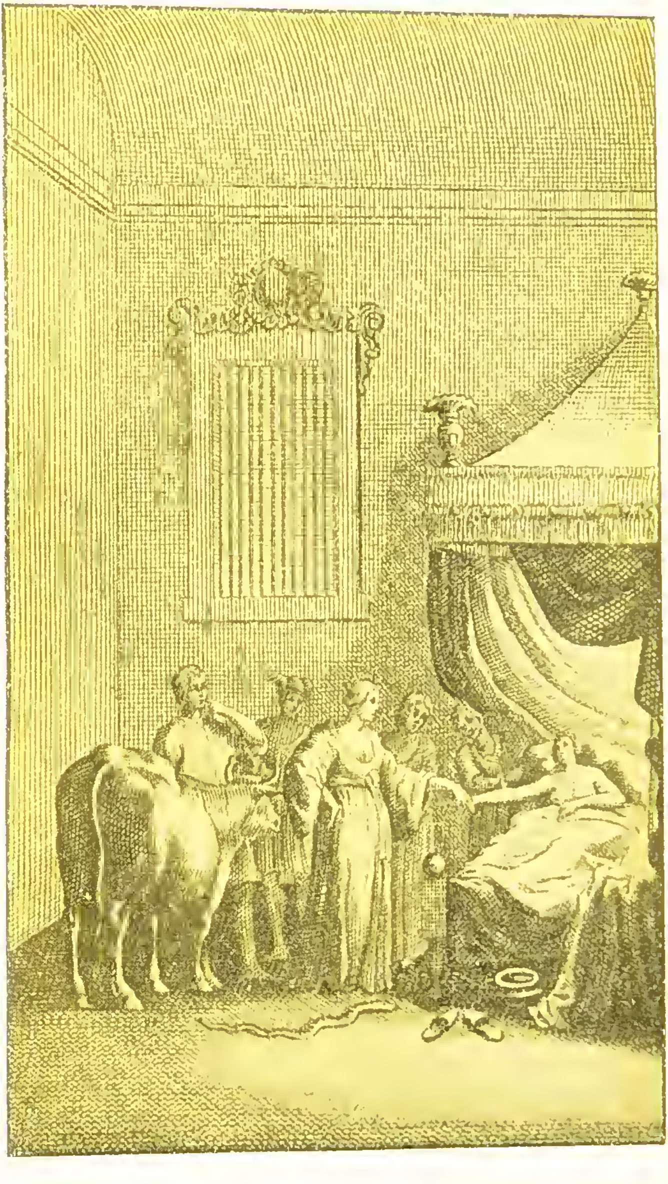
In Europe

In Italy, Jenner's discovery was successfully exploited by Sacco, of Milan, in 1801. He laboured with unwearied activity, becoming the director of vaccination, and in a few years he had vaccinated 20,000 people. For many of these the vaccine was obtained from an animal with natural cowpox which was discovered in Lombardy after a prolonged search.

In France, Valentin and Desoteux were the first to call attention to the subject, and the practice soon became popular. Liancourt established a Vaccine Institute by subscription, obtaining much financial support from Lucien Bonaparte, who was then Secretary of the Interior.

François Colon, a Paris physician, in order to encourage those who hesitated, had his own son, eleven months old, vaccinated. He also wrote and circulated widely a pamphlet in which he said:—

"I will inoculate gratuitously all the poor, all soldiers and their children, who have not had smallpox, on a simple letter of recommendation from beneficence committees, from different administrations and constituent bodies. I will entertain at my house and attend three intelligent nursing mothers with their



"The Blessings of Vaccination to Man"

From an engraving, 1800

children, during the whole period of inoculation. I invite all my colleagues to study my inoculations, and to be convinced by the testimony of their own eyes of the usefulness and advantages of vaccine. I shall be very pleased to enter into correspondence with all the doctors of provinces who wish to know and to propagate this method of inoculation. I will send them some virus vaccine which may be useful to them.

"In order to inspire the public with confidence, I will give to those who wish it a receipt for what I receive as my fees, with a promise to restore it at sight to those who suffer from smallpox after having been inoculated by me. As a guarantee of this promise, I will, if they wish it, sign a deed in the presence of a lawyer, with mortgage on an unencumbered real estate, binding me to refund in the above-mentioned case, as far as I shall be called upon to make good my promise."

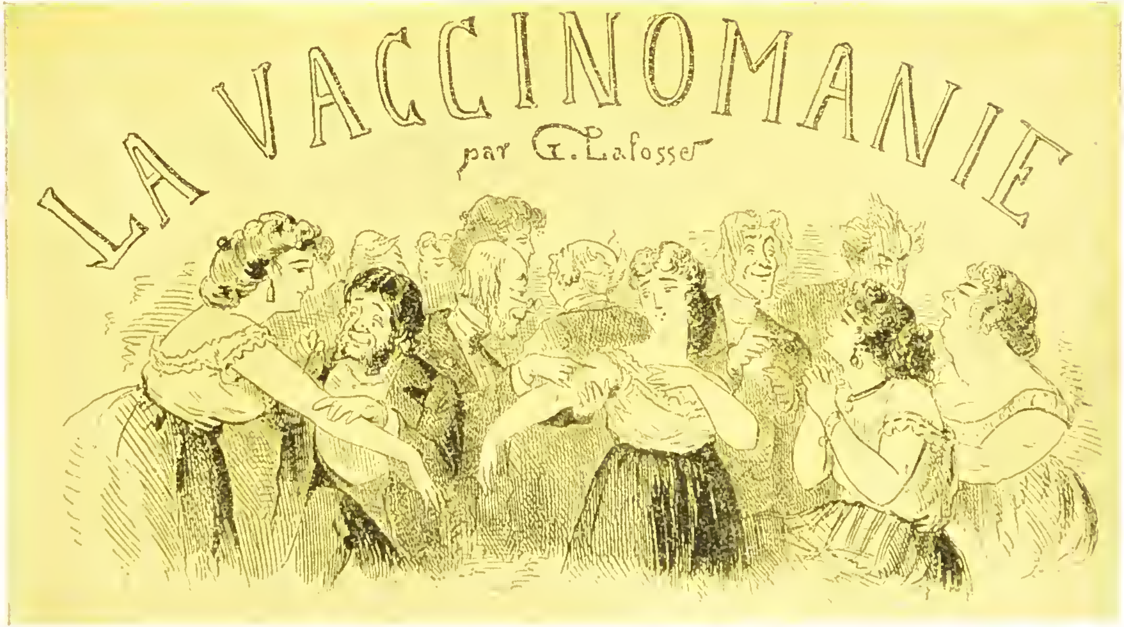
Napoleon's soldiers vaccinated

In January, 1800, Jenner's Treatise was translated into French by the Count de la Roque, and, five years later, Napoleon demonstrated his confidence in Jenner's theories by ordering all soldiers who had not suffered from smallpox to be vaccinated.

The Empress of Russia is interested

Among the most enthusiastic supporters of Jenner's discovery was the Empress of Russia, who urged her subjects to be vaccinated, and who ordered that the first child who submitted to the operation should receive the name of "Vaccinoff," and be educated at the public expense. The young Vaccinoff, after vaccination, was conveyed to St. Petersburg in one of Her Majesty's Imperial coaches, and, after being educated in the Foundling Hospital, received a pension for life. The Empress, in commemoration, afterwards presented Jenner with a valuable diamond ring.

Meanwhile, Jenner's influence and popularity increased. The Emperor of Austria and the King of Spain, at his request, released Englishmen, who had



"Those doctors, those doctors! they see pretty arms, pretty shoulders, pretty . . . . And they make by it, too!"

From a French caricature by Lafosser

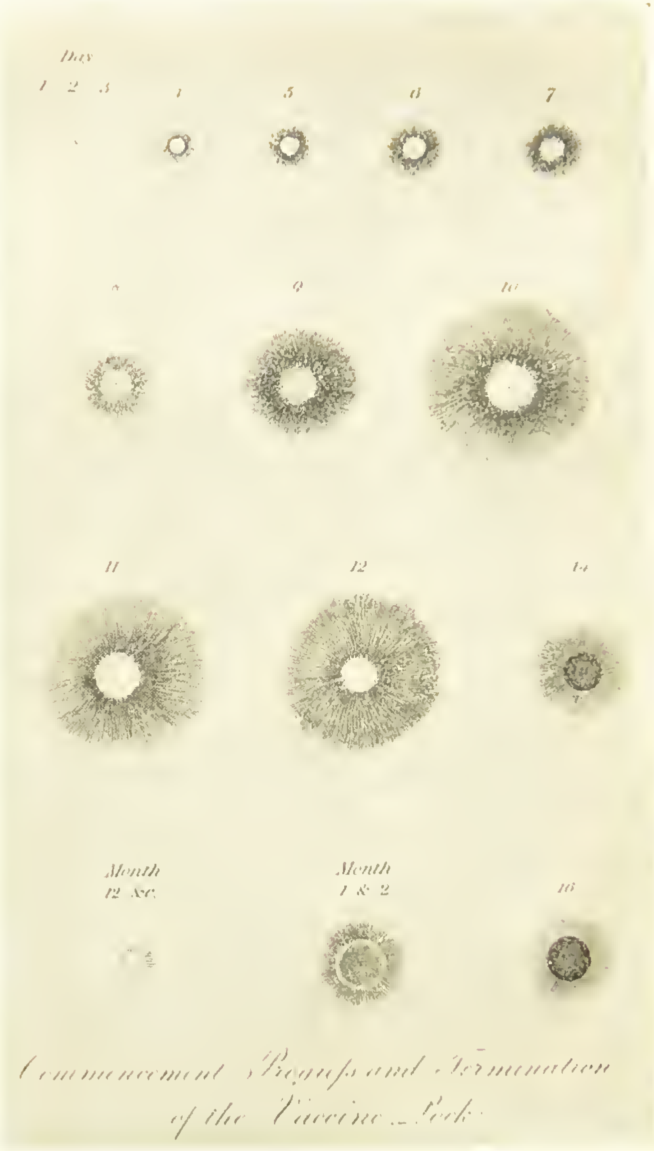
been taken in the wars. In France, where a Dr. Wickham remained a prisoner, Jenner was applied to by one of his friends to present a petition to Napoleon, soliciting the physician's liberation. He readily undertook the task, and drew up a petition to the Emperor at the time when he was exhibiting his greatest animosity towards Britain. The petition was forwarded and safely reached the Emperor. It happened to be handed to him when he was seated in his carriage, together with the Empress Josephine, waiting for the horses to be changed. Glancing at it, he exclaimed to the driver, "Away, away!" But the Empress, examining the paper, said, "But stay, you see from whom this comes—Jenner." Napoleon's manner changed immediately, and he replied, "What that man asks is not to be refused," and so Wickham was released. Napoleon liberated several other prisoners, and even whole families, from time to time, at Jenner's request, and it is stated that he never refused a petition sent by Dr. Jenner, such was the esteem in which he held him.

Prisoners of war released

Napoleon further issued a decree that a hundred thousand francs should be at the disposal of the Minister of the Interior for the propagation of vaccination.

During the years that Jenner had spent upon his research and inquiry, he had expended a considerable amount of money, hoping that his discovery might eventually recoup him and become a financial success. This becoming known to his friends, he was advised to apply to Parliament for a grant, and on December 9, 1801, he journeyed to London to frame a petition, for which he obtained a promise of assistance from Admiral Berkeley. The petition was laid before the House in the March of the following year, and was presented on the following grounds: First, that he had discovered that cowpox was inoculable from cow to

Parliamentary grant to Jenner



COMMENCEMENT, PROGRESS AND TERMINATION
OF THE VACCINE POCK

From the Report of the Royal Jennerian Society. 1816 man; second, that persons so inoculated were for life perfectly secure from smallpox. Jenner added that he had not made a secret of his discoveries, that the progress of smallpox had already been checked, and that he had been put to much expense and anxiety. The matter was referred to a Committee, and in June, 1802, the report was laid before the House, which ultimately granted ten thousand pounds to Jenner, who then left London for Berkeley.

The Royal Jennerian Society

Shortly afterwards, some of his leading supporters in London again took up the matter of forming a Jennerian Institution, for promoting universal vaccine inoculation. The Queen became a patron, the King granting permission for the society to be called "The Royal Jennerian Society for the Termination of the Smallpox," and an influential board of directors and a medical council were appointed. Jenner was made President, and Dr. John Walker appointed Resident Vaccinator. Thirteen stations were opened in London, and in eighteen months they announced that 12,288 inoculations had taken place, and 19,352 charges of cowpox virus had been supplied to different parts of the British Empire and foreign countries. But although the Institution began well, in less than six years its success was on the wane. Jenner disagreed with the chief vaccinator, who resigned his office, and in 1808 the Society practically collapsed. Meanwhile, Jenner had decided to take a practice in London, and for some years settled in Hertford Street, Mayfair. But the results were far from satisfactory, and, after a trial, he returned to his native village. In a letter to one of his friends, referring to the matter, he says, "I have now completely made up my mind with respect to London. I have done with it, and have again commenced the village doctor. I found my purse not equal to the sinking of the thousand pounds annually (which has actually been the case for several successive years), nor the gratitude of the public deserving such a sacrifice. How hard, after what I have done, the toils

"EFFECTS ARISING FROM VACCINATION"
From a caricature. 1806

I have gone through, and the anxieties I have endured in obtaining for the world a greater gift than man ever bestowed on them before (excuse this burst of egotism), to be thrown by with a bare remuneration of my expenses."

Doubts and difficulties

In the year 1804, failures of the new inoculation multiplied considerably, and even some of Jenner's best friends began to lose confidence. His time at Berkeley was largely taken up in replying to correspondents, and in endeavouring to account for the numerous failures. Jenner had been always aware that smallpox had occurred after vaccination, but that if it did occur he believed that vaccination could not have been properly performed.

He still continued to vaccinate all the poor who applied to him on certain days, so that he had sometimes as many as three hundred persons waiting at his door.

Criticism and caricature

Notwithstanding the success and support that vaccination was now receiving in all parts of the world, there were many who still opposed the practice, and pamphlets, lampoons and caricatures were constantly published by the anti-vaccinators. It was actually alleged by some that those inoculated by cowpox would assume the bovine features of the animals themselves. A Dr. Rowley wrote a long treatise entitled "Cowpox Inoculation no Security against Smallpox Infection; to which are added the Modes of treating the Beastly New Diseases produced from Cowpox." The work is illustrated by the picture of "a cow-poxed ox-faced boy." "Various beastly diseases," asserts the writer, "common to cattle have appeared among the human species since the introduction of cowpox—cowpox mange, cowpox abscess, cowpox ulcer, cowpox gangrene, cowpox mortification, and enormous hideous swellings of the face, resembling the countenance of an ox with the eyes distorted and eyelids forced out of their true

"EVILS OF VACCINATION"

From a French caricature

situation. Smallpox is a visitation from God, but the cowpox is produced by presumptuous man; the former was what Heaven ordained, the latter is perhaps a daring violation of our holy religion."

Another writer on the subject recounts the story of a lady who complained that "since her daughter was inoculated, she coughed like a cow, and has grown hairy over her body."

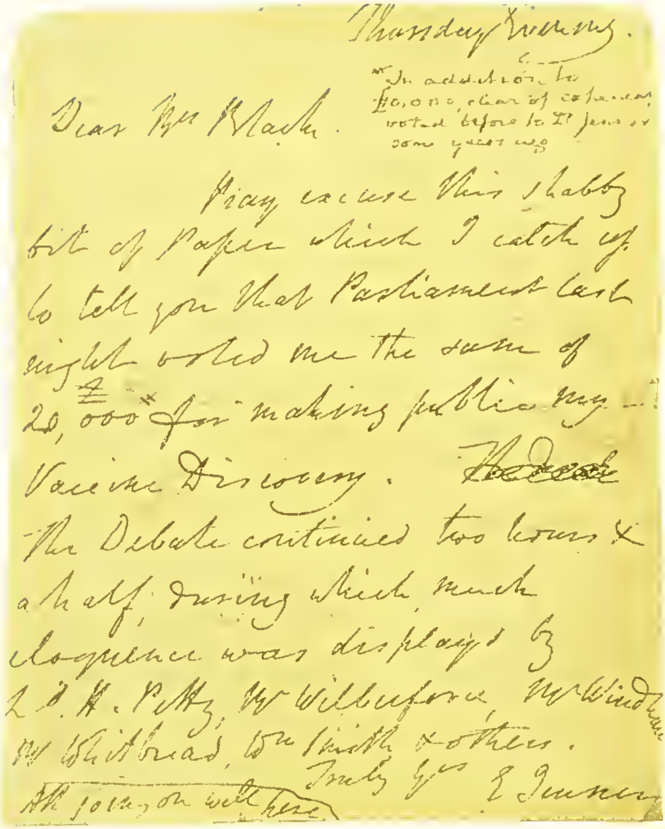
Another anti-vaccinationist declared that the inoculation of the cowpox had been discontinued in a part of the country in which he had been staying, because those who had been inoculated in that manner "bellowed like bulls."

It was stigmatised by others as the "damnest thing ever proposed," and "the most degrading relapse of philosophy that ever disgraced the civilised world."

Honours for Jenner

But, notwithstanding these fulminations, vaccination made steady progress, and every country vied in honouring its discoverer. Jenner was elected a member of nearly all the leading scientific societies in Europe. He was presented with the Freedoms of the Cities of London, Dublin, Edinburgh and Glasgow, and the Medical Society of London conferred on him a gold medal at their anniversary festival, when Dr. Lettsom delivered an oration on vaccination. In 1812, at Berlin, the anniversary of cowpox inoculation was celebrated by a Jennerian feast, and addresses and diplomas poured in upon the discoverer from all parts of the world. The following quaintly worded address was sent to him by the Red Indians of North America:—

"Brother! Our Father has delivered to us the book you sent to instruct us how to use the discovery which the Great Spirit made to you, whereby the smallpox, that fatal enemy of our tribe, may be driven from the earth. We have deposited your book in the hands of a man of skill whom our Great Father employes to attend us when sick or wounded. We shall not fail to teach our children to speak the name of Jenner,



Thursday Evening.

* In addition to
£10,000, clear of expenses,
voted before to Dr Jenner
some years ago

Dear Mrs Black.

Pray excuse this shabby bit of Paper which I catch up to tell you that Parliament last night voted me the sum of £20,000* for making public my Vaccine Discovery. ~~Indeed~~ The Debate continued two hours & a half, during which, much eloquence was displayed by Ld. H. Petty, Mr Wilberforce, Mr Windham Mr Whitbread, Wm Smith & others.

Truly Yrs E Jenner

All going on well here

Facsimile of Original Autograph Letter written by Dr. Jenner to Mrs. Black, informing her that Parliament had voted him £20,000 and to thank the Great Spirit for the bestowing upon him so much wisdom and so much benevolence. We send with this a belt and string of wampum in token of our acceptance of your precious gift, and we beseech the Great Spirit to take care of you in this world, and in the land of spirits."

A grant of £20,000

In July, 1806, the subject of vaccination was again brought before the House of Commons, and the question was considered whether a sufficient reward had been bestowed on the original discoverer of vaccine inoculation. The matter was referred to the Royal College of Physicians, and, having conferred with the other medical faculties in Scotland and Ireland, they reported in favour of a further grant being made to Dr. Jenner, with the result that it was agreed to present him with twenty thousand pounds.

The Government having decided to support vaccination, they felt called upon to found an establishment to carry on the work of the Royal Jennerian Institution, and Jenner was asked to draw up a plan and to prepare an estimation of the cost. The illness of his son necessitated his return to Berkeley, but the warrant for instituting a national vaccine establishment was obtained in his absence, and he was appointed director.

Dissensions, however, crept in at the outset, which ended in Jenner's resigning his post as director, although he continued to give the Institution the benefit of his advice when it was needed.

In 1810, many domestic trials came upon him. The death of his son distressed him so deeply that it materially affected his health. He went to Bath to endeavour to recruit, and on his return he was called upon to attend the Earl of Berkeley, and visited him up to the time of his death. The following year he lost his sister, which was also a great grief to him.

On May 26 in the same year, while in London, he was summoned to attend the bedside of the Hon. Robert Grosvenor, who had developed a serious attack of smallpox. He had been vaccinated by Jenner ten years previously. In four days he became delirious, and the worst symptoms manifested themselves in a very short time. Attended by Sir Henry Halford, Sir Walter Farquhar, and Jenner, he recovered, although a fatal termination had been regarded as inevitable. This case served to revive the agitation against vaccination, and caused quite a panic amongst those who had had their children vaccinated. A fresh outburst of criticism, together with a summons to give evidence before the House of Lords on the Berkeley peerage, seems to have greatly unnerved Jenner, and aged him considerably.

Vaccinated patient seriously attacked

In 1814, he visited London for the last time, when he was presented to the allied sovereigns and the Emperor of Russia on the occasion of their visit to London. The Grand Duchess of Oldenberg, the sister of the Emperor, was very desirous that Jenner should be introduced to His Majesty, and an interview took place. Alexander conversed with him ou the astonishing effects of vaccination in Russia, which he declared "had nearly subdued smallpox throughout that country." Jenner replied that he had the highest gratification upon hearing such an important fact from his Majesty. The doctor then presented the monarch with a volume of his own works, which he graciously accepted. A few days afterwards Count Orloff waited on Jenner, and asked him if a Russian order would be acceptable to him, but Jenner replied that he thought this exclusively belonged to men of independent means. The Count expressed his surprise, and Jenner respectfully declined the honour. A little later he had an audience with the King of Prussia, who gave him a pressing invitation to visit Berlin.

Jenner's last visit to London

In the year following he lost his wife, after a long illness, and, stricken with grief, he retired to Berkeley, which place he did not leave again, except for a day or two, until his death.

On January 23, 1823, he wrote in his last letter to his friend Gardner. "I have had an attack from a quarter I did not expect, the *Edinburgh Review*. These people understand literature better than physic, but it will do incalculable mischief. I put it down at one hundred thousand deaths at least. Never was I involved in so many perplexities."

Jenner's death

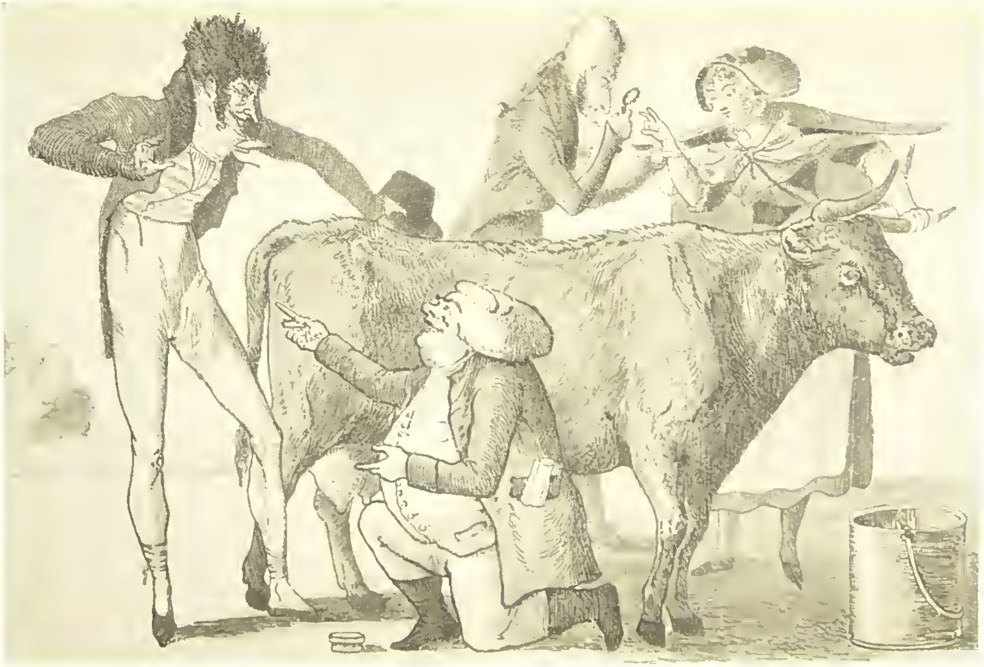
The following day he retired to rest, apparently in his usual health, and the next morning rose and came down to his library, where he was stricken with an attack of apoplexy and paralysis of the right side. He never rallied, and died the following morning, January 26, 1823.

Jenner's achievement

In estimating Jenner's great achievement it should be remembered that his discovery was not so much the fact that persons who had been infected with cowpox escaped variola, but that the matter taken from a human being suffering from cowpox had the power of *protecting another individual* from smallpox.

The lives that this discovery has been instrumental in saving are the most eloquent tribute to his memory, and the principles that he advocated and put in practice still remain the one efficient means of protection against one of the most dreaded scourges that afflict mankind.

It has been well said, that the brilliant discoveries that have since been made in the field of protective inoculation have added lustre to his fame, and his name will ever be remembered as that of one of humanity's greatest benefactors.



"THE ORIGIN OF VACCINATION"

From a French caricature

(Reproduced by kind permission from a print in the possession of the Royal Society of Medicine)

CHAPTER VI

THE PROGRESS OF THE PRINCIPLES OF VACCINATION AND INOCULATION

Many years elapsed before Jenner's principles of vaccination were applied to other diseases. This began with the study of fermentation, the foundation and development of bacteriology.

In 1838, De La Fonde, a Professor at the Alfort Veterinary School, pointed out to his students "little rods," as he called them, which he found in the blood of animals that had died from anthrax, an observation which was destined to have far-reaching results.

Following this, Henle, in 1841, came to the conclusion, on purely theoretical grounds, that the cause of some diseases must be living organisms, and, by a similar induction, Farr applied the word "zymotic" or "fermentive" to them, a term which was soon almost universally adopted.

Micro-organisms and disease

In 1849, Pollender and Brauell also noted certain micro-organisms in the blood of anthrax victims, but it was not until 1861 that these bodies were studied by Davaine, who, describing the thread-like corpuscles which he had seen in the blood of sheep attacked by anthrax, declared: "In the present state of science, no one would think of going beyond these corpuscles to seek for the agent of contagion. This agent," he stated, "is visible, palpable; it is an organised being endowed with life, which is developed and propagated in the same manner as other living beings. By its presence, and its rapid multiplication in the blood, it without doubt produces in the constitution of this liquid, after the manner of ferments, modifications which speedily destroy the infected animal."

Further investigations proved the correctness of Davaine's theory, viz., that most forms of contagious disease were the result of fermentative processes,

LOUIS PASTEUR

Born 1822. Died 1895

analogous in all respects to the fermentation which takes place in wine or beer.

Pasteur and his work

It is very largely to the brilliant researches of Louis Pasteur, and his investigations into the causation of disease, that we owe the foundation of the scientific era of inoculation which produced such remarkable developments in recent times. Born on December 27, 1822, at Dôle, in France, he was the son of a tanner who carried on business in that town. He was sent for a short time to a boarding school in Paris, and afterwards to a college at Arbois, where his father hoped he would eventually become professor. In 1842, he took his degree as Bachelor of Science at Dijon, and afterwards went to Paris to attend classes at the Sorbonne, where he studied under the celebrated Dumas. In 1848, he was appointed Professor of Physics at Dijon, and six years later became Professor and Dean of a new faculty of science at Lille, where he commenced his famous researches on fermentation which led to such important after results. In 1865, he was sent, on the recommendation of Dumas, to Alais, to investigate the silk-worm disease, which had seriously affected the silk industry of France. This he brought to a successful conclusion.

In 1877, he began to investigate anthrax, or charbon. This mysterious scourge was then causing terrible ravages among sheep in France, and animals stricken down by the disease died within two hours.

Early results in anthrax

The starting-point of Pasteur's investigation of anthrax was, that not only fermentatives, but also disease processes, were due to the action of bacteria. He declared that anthrax was due to this cause, and set out to prove that it was possible to modify the virulence of a pathogenic organism by artificial means, so that it no longer produced fatal results, and that this attenuated virus protected against the fatal form of the disease.

DR. CHAMBERLAND

In the summer of 1879, Pasteur interrupted his researches on anthrax to investigate a sudden epidemic that had broken out in the farmyards of France, known as chicken cholera.

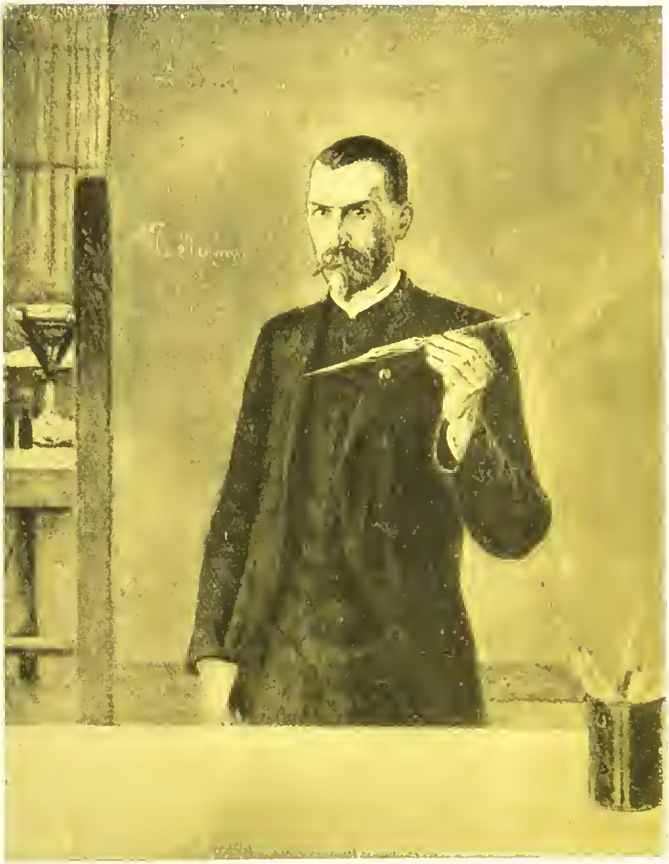
The microbe of chicken cholera

As far back as 1869 Moritz, an Alsatian veterinary surgeon, suspected that this disease was caused by some micro-organism, and nine years afterwards Perroncito made a drawing of an organism which he discovered in a fowl that had died from the disease. Toussaint studied it, and demonstrated that this microbe was indeed the cause of virulence in the blood, and sent the head of a cock that had died of chicken cholera to Pasteur.

Inoculation with attenuated virus

Pasteur at once began an investigation of the subject, and discovered that a micro-organism was the specific cause of the disease. He further found that it could be propagated outside the fowl's body in sterilised material, and after two generations of such cultures the virus did not lose its specific character or intensity if each culture was made from the preceding one at short intervals. If a few days were allowed to elapse, he noted that the virus became weaker, and it could then be obtained of various degrees of virulence, some fatally strong, others so attenuated that a bird inoculated with it had a slight illness only, but this trifling effect protected it against subsequent inoculation with the stronger virus. His further researches showed that the virus could be cultivated of each degree of intensity without altering its strength, that the weakest could be cultivated as well as the strongest, and that of any intermediate strength equally; they threw an entirely new light on certain phenomena, and paved the way to his further remarkable discoveries.

In 1881, he resumed his search into the cause of anthrax, and in February he was able to announce his discovery of a vaccine to protect animals against



Dr. Roux

that disease, which aroused considerable interest throughout Europe.

The Melun Agricultural Society hastened to give the scientist facilities to prove his assertions, and invited Pasteur to organise public experiments on his method of preventive vaccination for anthrax in the neighbourhood of Melun, Fontainebleau and Provins.

First public experiments with anthrax vaccine

Pasteur accepted the proposition, and the Melun Agricultural Society put sixty sheep at his disposal. twenty-five of which were to be vaccinated by two inoculations at twelve or fifteen days' interval, with some attenuated anthrax virus. Some days later these twenty-five, and also twenty-five others, were to be inoculated with some very virulent anthrax culture. "You will see," wrote Pasteur with confidence, "the twenty-five unvaccinated sheep will all perish, and the twenty-five vaccinated ones will survive."

On May 5, 1881, the day appointed for the test, Pasteur, accompanied by his assistants Chamberland and Roux, whose names have since become famous in the world of science, arrived at the farm Pouilly-le-Fort, near Melun, where a great throng of physicians, apothecaries, veterinary surgeons and agriculturists had assembled. The sheep to be vaccinated and those left unvaccinated for the test were separated under a large shed, and each of the former received an injection consisting of five drops of the bacteridium culture, which Pasteur called the first vaccine, on the inner surface of the right thigh, by means of a small Pravaze syringe. A second inoculation was not made till a fortnight afterwards, with a vaccine which, though still attenuated, was more virulent than the first. On the last day of the month the third and last inoculation, with very virulent anthrax culture, took place, this time on fifty sheep and ten cows, vaccinated and unvaccinated. Pasteur, writing to his son-in-law, said: "On June 5 at the latest, the final result will be known, and that should be twenty-five survivors out of twenty-five sheep and six cows. If this success is complete this will be one of the finest examples of applied science in this century, consecrating one of the greatest and most fruitful discoveries."

The result was in every way satisfactory, as Pasteur had predicted. The sheep that had been originally vaccinated remained alive, while the unvaccinated ones died.

On June 13, Pasteur communicated the result of this great control experiment to the Académie des Sciences, and said: "We now possess virus vaccine of anthrax capable of preserving those inoculated from the dread disease, without being in itself deadly."

The French Government, desirous of recognising his discovery, offered him the Grand Cordon of the Legion of Honour, but Pasteur would only accept it on the condition that his able assistants, Roux and Chamberland, were to share in the honour, and to this stipulation the Government acceded.

Before even the completion of the discovery of the anthrax vaccine the great scientist had embarked on an investigation of still greater importance, namely, that into the cause and prevention of hydrophobia.

The subject of this dread disease, which goes back to a period of great antiquity, was one which has baffled scientific investigation throughout the centuries.

Hydrophobia in antiquity

Celsus described it in Roman times, and remarked on the patient being tortured at the same time by thirst and an invincible repulsion towards water. He recommended suction of the bitten part by means of a dry cupping glass, and afterwards the application of the actual cautery, or of strong caustics, a method of treatment which remained in vogue down to the nineteenth century. Galen also described the disease, and recommended the excision of the wounded part as the chief protective treatment. In the Middle Ages certain Saints, such as St. Hubert in Belgium, were supposed to effect miraculous cures, and sea-bathing, or the throwing of the patient into a lake or pond, was supposed to effect a cure.

Leroux's method of treatment

In 1780, a prize was offered for the best method of treating hydrophobia in France, and it was awarded to Surgeon-Major Leroux, who wrote a dissertation recommending cauterisation as the best means of treatment. All methods and remedies, however, proved unavailing, and down to the latter part of the nineteenth century, hydrophobia was regarded as hopelessly incurable, and the mortality from rabies was gradually increasing. Practically every person in whom the symptoms of hydrophobia were once developed, might be regarded as condemned to death without hope of a reprieve.

Pasteur's attention was first drawn to the subject in 1880, by Bourrel, an old army veterinary surgeon, who had long been trying to discover a remedy for the disease. He had suggested, as a preventive measure, that the teeth of dogs should be filed down so that they could not bite into the skin.

Pasteur's experiments commence

Bourrel kept a number of animals in kennels, and two suffering from rabies he brought to Pasteur's laboratory. On December 10 of the same year, while Pasteur was still planning his investigations, he was notified by Professor Lannelongue that a little child, five years of age, who had been bitten by a dog on the face a month before, had been admitted to the Hôpital Trousseau, with symptoms of hydrophobia. The child died after twenty-four hours of horrible suffering, suffocated by the mucus which filled the mouth. Pasteur seized the opportunity, and, hurrying to the hospital with all speed, collected some of this four hours after the child's death. Adding a small quantity of water to the mucus, he inoculated some rabbits with the liquid, and they died in less than thirty-six hours.

"SERUM DIRECT FROM THE HORSE. FRESHLY SUPPLIED

From a German caricature

The saliva from these he injected into other rabbits, who succumbed almost immediately. On examining the blood of the latter under the microscope, he discovered a micro-organism, which he cultivated in veal broth, and then inoculated rabbits and dogs with the culture. After their death, a microscopical examination of the blood revealed the same organism.

Following these experiments he made several attempts to inoculate rabies direct to other rabbits through the medium of the saliva of a mad dog. The great danger involved in carrying this out can be imagined from the description given of the following scene. On one occasion two assistants at Bourrel's kennels undertook to drag a mad bulldog suffering from rabies, and foaming at the mouth, from the cage in which it was kept. They seized it by means of a lasso, and, stretching it on a table, held the struggling and ferocious animal down while Pasteur, with undaunted courage, drew off a few drops of the deadly saliva by means of a glass tube held between his lips.

Hydrophobia and the grey cortex

But uncertainty still followed the inoculations even of this medium, and the incubation was very slow, so that some other means, which would be more rapid and certain, were sought for. Roux, from observation of several rabid animals in the laboratory, concluded that the mad fury of a rabid dog excited the grey cortex of the brain, and mentioned the same to Pasteur, who decided to follow the matter up. On making the next post-mortem on a mad dog, he uncovered the brain, and with a sterilised tube removed a particle of the substance, which he mixed with sterilised water. With this liquid he inoculated several animals, who rapidly succumbed to hydrophobia, and from this experiment he concluded that the seat of the rabid virus was not in the saliva only, as it was previously thought to be, but was also in the brain. He resolved to confirm this by a long series of experiments, and on the termination of these he decided to submit his results to be verified by a Commission. This was duly constituted by the French Government, in May, 1884, and a plan of work was immediately formulated. A large number of dogs were submitted to control experiments, which were continued for several months, and in August of the same year the Commission reported to the Minister of Public Instruction that the first series of experiments had been carried out with the most satisfactory results, and they desired that further research might be prosecuted on a larger scale. This was agreed to, and a suitable place was found in the Park Villeneuve l'Etang, near St. Cloud.

On March 28, 1885, Pasteur, writing to a friend, states, "I shall be busy for some time, settling down, or rather settling my dogs down, at Villeneuve l'Etang. I also have some new experiments on rabies in hand, which will take some months. I am demonstrating this year that dogs can be vaccinated or made refractory to rabies, after they have been bitten by mad dogs. I have not yet dared to treat human beings after bites from rabid dogs; but the time is not far off, and I am much inclined to begin by myself—inoculating myself with rabies, and then arresting the consequences; for I am beginning to feel very sure of my results."

Kennels established at Villeneuve l'Etang

In May everything was ready at Villeneuve l'Etang for the reception of sixty dogs, where they were accommodated in immense kennels. Besides this, forty other dogs were under experiment at Rollin, and fifteen others at Bourrel's. Two series of experiments were then carried out on these animals, the first consisting in making the dogs refractory to rabies by preventive inoculation and the second in preventing the onset of rabies in dogs bitten or subjected to inoculation. But months went by without bringing about any satisfactory conclusions.

The matter was brought to a crisis by an unexpected incident. On July 6, 1885, a little boy named

Joseph Meister, nine years of age, was brought to Pasteur's laboratory by his mother. He had been terribly bitten two days before by a mad dog at Meissengott. The wounds had been cauterised by a local doctor, who had advised the mother to bring her child to Paris. Pasteur was torn by conflicting emotions, and the sight of the child, who suffered so much that he could hardly walk, caused him to decide that something should be done. He made arrangements for the comfort of the poor mother and her son, and told them to see him again at five o'clock. Meanwhile, he communicated with his colleagues, Vulpian and Grancher, and they came to the laboratory that evening and examined the boy's wounds, some of which were very deep. In the end they concluded to inoculate the boy immediately. The liquid chosen was fourteen days old, and had quite lost its virulence, and was prepared from some fragments of medulla oblongata. Pasteur had a bedroom prepared for the mother and child close at hand, and the little sufferer soon became happy with the many animals that the scientist kept about the place for experimental purposes. The first inoculation was followed by others, gradually increasing in strength. "All is going well," wrote Pasteur, on July 12, "the child sleeps well, has a good appetite, and the inoculated matter is absorbed into the system from one day to another without leaving a trace. It is true that I have not yet come to the test inoculations which will take place on Tuesday, Wednesday and Thursday. If the lad keeps well during the following three weeks, I think the experiments will be safely concluded." Thus, for days, Pasteur became a prey to anxiety, going through in succession hopes, fear and anguish in his desire to save the child from a terrible death. His wife states he could no longer sleep, visions came to him of this child struggling in the last mad paroxysms of hydrophobia. At length the treatment was complete, and Pasteur, yielding to persuasions to take a rest, left the boy in the hands of Grancher

Boy inoculated

"VACCINATION ON TOUR"

From a caricature, 1799

for a short time, and went into the country, where he lived in constant expectation of the daily report from Paris. But these were all favourable, and the boy seemed to be completely well.

On October 21, Pasteur made his statement on the case before the Académie des Sciences. By this time three months and three days had passed, and no ill had resulted to the child.

Success reported to the Académie des Sciences

Bouley, at this historic meeting, remarked, "We are entitled to say that the date of the present meeting will remain for ever memorable in the history of medicine, and glorious for French science; for it is one of the greatest steps ever accomplished in the medical order of things—a progress realised by the discovery of an efficacious means of preventive treatment for a disease, the incurable nature of which was a legacy handed down by one century to another. From this day, humanity is armed with a means of fighting the fatal disease of hydrophobia and of preventing its onset. It is to M. Pasteur that we owe this, and we could not feel too much admiration or too much gratitude for the efforts on his part which have led to such a magnificent result."

Directly Pasteur's great discovery was made known, people who had been bitten by rabid dogs hastened to Paris from all parts of Europe, and a regular hydrophobic service was rapidly organised. Physicians came from all parts of the world, asking to be allowed to study the details of the method. Pasteur took a personal interest in each of his patients, and children especially inspired him with a loving solicitude.

Commission appointed

The Académie des Sciences appointed a Commission, which unanimously adopted the suggestion that an establishment for the preventive treatment of hydrophobia should be instituted in Paris, which resulted in the erection of the Pasteur Institute, in the Rue Dutot, which was opened by President Carnot in November, 1888. This great dispensary for the treatment of hydrophobia has since become a centre of research and teaching on virulent and contagious diseases.

The example was followed in several other countries, and by May, 1889, there had been established seven anti-rabic institutions in Russia, five in Italy, one in Constantinople, one in Barcelona, one in Bucharest, one in Rio de Janeiro, one in Havana, one in Buenos Aires, one in Mexico, and one in Vienna.

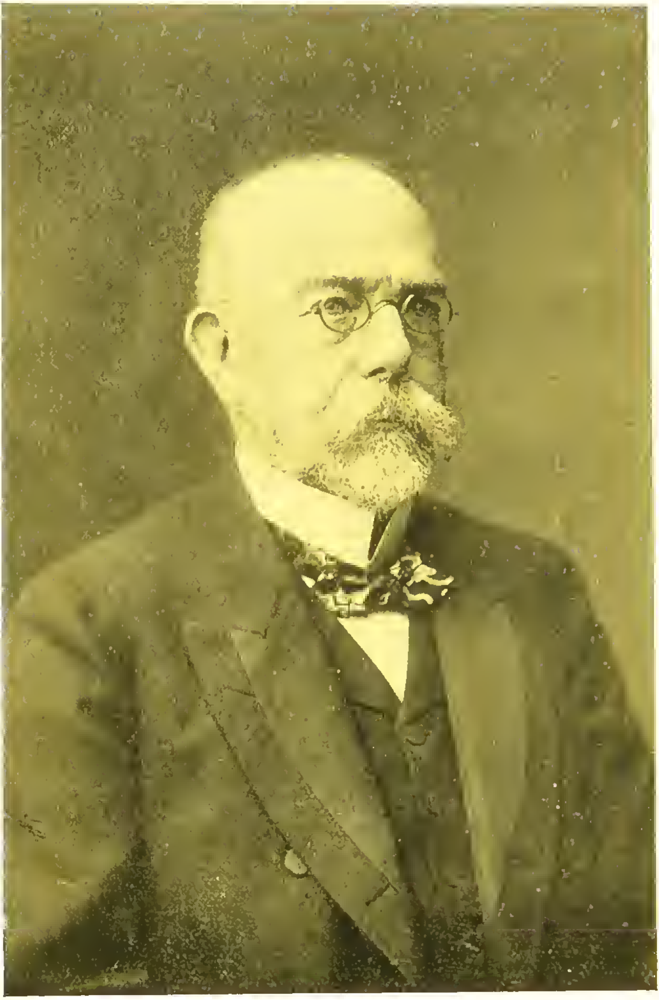
Pasteur's discovery was investigated and confirmed by a Commission appointed by the British Government in 1886 to study and verify the facts. After fourteen months' investigation of the prophylactic method, they reported of the new method of inoculation or vaccination discovered by Pasteur, that it would be difficult to over-estimate its utility both from the point of view of its practical side and of its application to general pathology.

Some statistics of anti-rabic inoculation

Some idea of the value of the treatment may be gathered from the following: Since anti-rabic inoculation was first performed (July 6, 1885) up to May 21, 1889, 6,870 persons were treated at the Institut de Paris alone. Dr. Roux stated, in a lecture delivered before the Royal Society of London on May 23, 1889, that, on an average, since 1885, about a hundred and fifty persons came each month to the laboratory to be inoculated. The injections were made, he stated, in the side, the right and left alternately; they were repeated for fifteen days. For ordinary bites, the injections commenced with medulla dried for fourteen days, and stopped with that dried for three days. In cases which were more serious, a greater number of injections were made, and the recent medullas were arrived at sooner, as a more active treatment was necessary against such bites.

But, with the conclusion of his great discovery in connection with rabies, Pasteur's labours were not yet ended, and, in spite of his failing strength, in conjunction with Roux and Yersin, researches had already been commenced in his laboratory on diphtheria, which were to lead to brilliant results in the future.

Towards the close of 1895, Pasteur was seized with a serious illness, which caused the greatest anxiety to his family and friends. Although an improvement took place for a short time, he never thoroughly recovered, and on September 28, 1895, he passed away at Villeneuve l'Etang, near the scene of his triumphant discoveries.



ROBERT KOCH
Born 1843 Died 1910

CHAPTER VII

BACTERIOLOGY, AND ITS INFLUENCE ON PREVENTIVE MEDICINE

Few men have done more in laying the foundation of the problems associated with immunity and the prevention of disease than Robert Koch, who was the first also to demonstrate the transmission of infectious diseases artificially from animal to animal, from which method such great results have been achieved in recent years.

He was born on December 11, 1843, at Klausthal, in the province of Hanover, and, after finishing his academic career, and taking his degree in medicine, he became an assistant in the General Hospital in Hamburg. Afterwards he became physician to the Asylum for Idiots in Langenhagen, near Hanover, until 1868. He then took up private practice for a time, and after going through the Franco-Prussian War as a surgeon, became district physician in the town of Wollstein. Here he fitted up a laboratory, and commenced to devote all his spare time to the study of the diseases of animals in the district in which he lived. Anthrax was one of the earliest diseases in which he interested himself, and it was his ambition to completely work out the life-cycle of the anthrax bacillus. The results of his research were published in 1876, when he set out the etiological relationship of the bacillus of anthrax to the disease, and by this paper, which has become one of the great classics of bacteriology, he threw the first clear light on the obscurity which at that time enveloped the world of micro-organisms.

Robert Koch

Koch's work on anthrax was accepted everywhere in Germany, but was opposed in France by Paul Bert. Bert's opposition induced Pasteur to take up the study of anthrax. He confirmed Koch's observations, and eventually, as already stated, brought the matter to a practical and satisfactory conclusion.

Koch then, with characteristic doggedness and energy, set himself to work to improve the methods and technique of bacteriology, and to him we owe many of the most useful discoveries in that branch of science. He devised most of the best methods for sterilisation and disinfection, and suggested many improvements in methods of work. Perhaps his greatest achievement may be said to be his poured-plate method for the isolation of organisms in pure culture. Up to this time no method had ever been devised for obtaining pure cultures of organisms from mixtures. He watched with minute care the development of the bacteria under the microscope, rejecting as worthless any preparations which showed extraneous organisms, and controlling his work by constantly producing the disease by inoculation. To obtain his pure cultures he employed nutrient gelatin, which he used in such proportions as to give a solid coagulum when cool, and added to this gelatin meat infusion to furnish a nutrient medium for the growth of organisms. His method of making streak cultures and of pouring plates gave pure cultures, and solved a problem which had been attempted by so many of his predecessors, and which gave greater impetus to the advancement of bacteriology as a science.

Koch's bacteriological work

He demonstrated the parasitic nature of infectious diseases, and the methods of cultivating pathogenic bacteria outside the body were brought by him to a high degree of perfection. In this way a systematic study of the cause of a disease became possible, and the means of combating its action determined by experiments.

Koch eventually removed to Berlin, and devoted himself exclusively to laboratory work. In 1882, he set to work to elucidate the etiology of tuberculosis, which he succeeded in proving to be due to the tubercle bacillus. To demonstrate this he devised a new method of staining, by means of which he could

Etiology of tuberculosis

differentiate between the organisms always present in tuberculous regions and those accidentally found there. He finally succeeded in cultivating the organisms he had stained, on solidified blood serum, and proved their relation to the disease by inoculation experiments on rabbits and guinea-pigs.

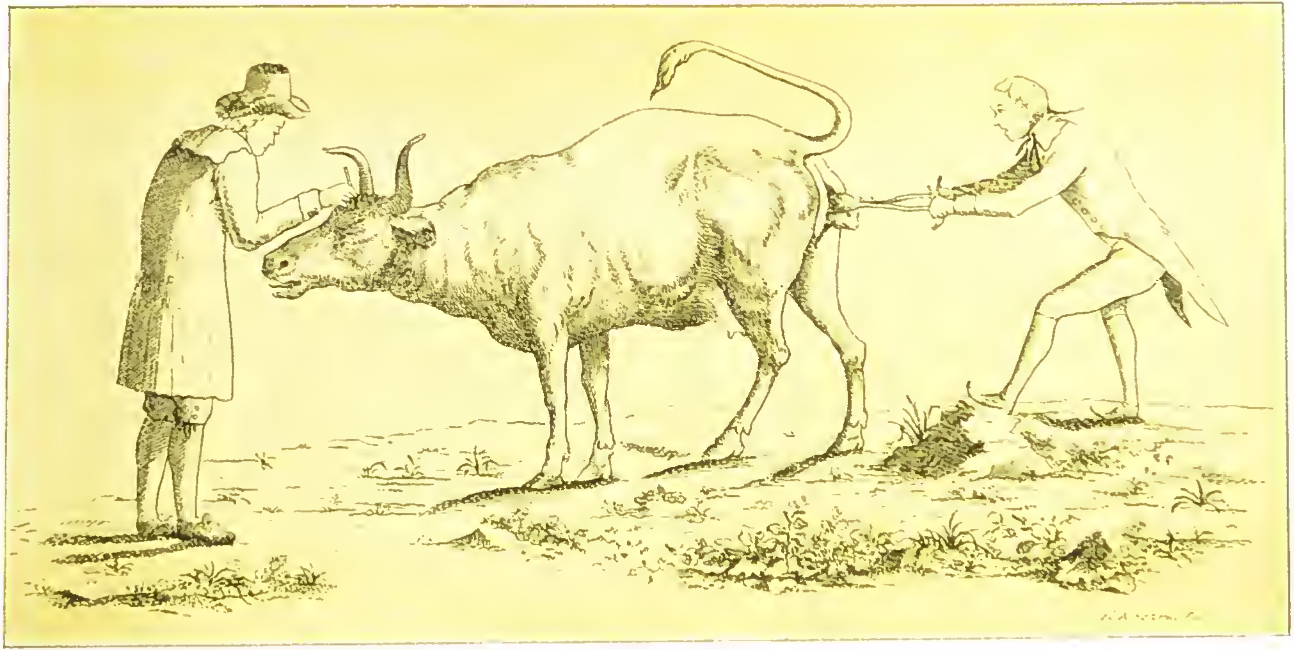
Preparation of tuberculin

In 1890, he described the preparation of tuberculin, which was at once hailed throughout the world as the great specific for tuberculosis. Unfortunately, on trial it did not prove the success anticipated, and its failure for some time detracted from Koch's reputation. Physicians and patients suffering from the disease flocked from far and near to Berlin in the hurry to obtain even the smallest quantity of the remedy, and the use of this potent product, given indiscriminately in too large doses by inexperienced men, was followed by disastrous results.

Improved methods of preparation have since been devised and exact knowledge has been gained, so that tuberculin has again come into extensive use both therapeutically in cases of tuberculosis and as a means of diagnosis in testing human beings or animals for the existence of the disease.

The later years of Koch's life were devoted to the investigation of tropical diseases, and the study of malaria. For this purpose he travelled through South Africa and German East Africa, and was in charge of the sleeping sickness commission sent out by Germany in 1906.

He died on May 27, 1910, working in the institute where he laboured daily, almost up to the last.



"THE COWPOX SWINDLE" (DER KUHPOCKEN SCHWINDEL)
From a German caricature. 1801

CHAPTER VIII

The Modern Development of Inoculation and Serum Treatment

Only the briefest summary is possible of the enormous development of prophylaxis and treatment by specific inoculation, since the new era of exact bacteriology was inaugurated by the researches of Pasteur, Koch, and their immediate followers. It may be stated that, apart from theoretical investigation of the mechanism of the immune reaction, practical progress has been made along two distinct lines. Pasteur's method of inoculation with an attenuated culture or virus, as described in a previous chapter, was directed to the active immunisation of the patient, and this is the basis of the various forms of protective or therapeutic inoculation or "vaccination" in use at the present day, whether the inoculum or vaccine consists of a living culture of modified virulence, a suspension of the killed organisms, or a solution of the soluble toxic substances which the organisms produce in artficial fluid media. As an example of the use of a culture of modified virulence may be mentioned Ferran's and Haffkine's prophylactic vaccines against cholera and Strong's similar vaccine for plague. Killed cultures are used prophylactically in Kolle's cholera and Haffkine's plague vaccine. Wright was responsible for the first systematic use of a killed suspension of typhoid bacilli as a protective inoculation against enteric fever, and, largely owing to the advocacy of the same observer, analogous killed cultures have acquired an important position in the prophylaxis and treatment of almost all infections which can be definitely associated with a known type of organism. Active inoculation of the patient with soluble toxic substances produced in artificial culture is an important factor in the therapeutic use of the tuberculins.

Methods of immunisation compared

W. M. HAFFKINE

Blood and serum

Investigation of the nature of the changes in the tissues of the animal, which accompany the process of immunisation by the injection of bacteria or their products, and which form the basis of the new condition of acquired resistance, led to the discovery that the blood and serum of such immunised animals contain substances capable of neutralising the inoculated poison or destroying the inoculated organism. The discovery of the formation of substances antidotal to bacterial toxins is associated with the names of Salmon and Theobald Smith, Brieger and Kitasato, Roux and Yersin, Chantemesse and Charrin and others. Pfeiffer showed clearly that many organisms, such as the bacilli of cholera and typhoid, streptococci, etc., to which the animal body can acquire a high degree of immunity, form no significant amount of soluble toxins. Metschnikoff and his followers attributed the defence of the organism against such invaders to the phagocytic activity of the leucocytes; but here again the work of many observers, starting with Flügge and Nuttall, showed that the body fluids of the immune animal contain substances which destroy the vitality and even the structural integrity of the infecting organisms.

"Opsonins"

It may be noted that the apparent gap between the phagocytic and humoral theories of immunity against bacteria, has been bridged to some extent of recent years by the description of "opsonins" (Wright), bodies which so alter the bacteria that they are defenceless against the attack of the leucocytes. Another great step was made when it was shown that the protective anti-bodies, whether antitoxic or anti-bacterial in action, could be transferred to an animal not actively immunised. This was shown by Richet and Hericourt to be possible with serum from an animal immunised against pyogenic cocci. A few years later came the classical work of Behring and Kitasato, proving the possibility of transferring immunity against the toxins of tetanus and diphtheria, by injecting into a normal

PROF. BEHRING

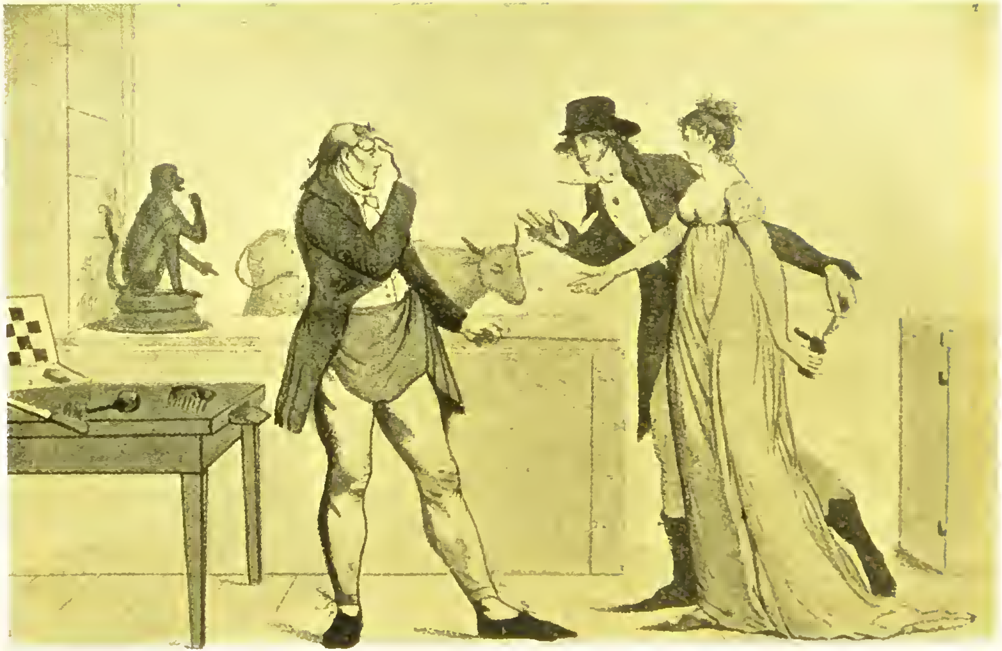
animal, serum from an animal rendered immune by a course of inoculation with such toxin. The introduction of these two antitoxic sera, obtained from highly immunised horses, into practical human therapeutics, in which Roux also played an important part, formed the beginning of serum therapy as distinguished from inoculation; and they still hold their place as the most unquestionably efficacious among the various sera now available for use, though Flexner's recent results with an anti-meningococcus serum, in epidemic cerebrospinal meningitis (spotted fever), bid fair to challenge this supremacy.

Beginning of serum therapy

It will be seen that the rival methods of inoculating and immunising the patient himself on the one hand, and transferring serum from an animal immunised by inoculation on the other, aim at inducing two distinct types of immunity, called "active" and "passive" respectively by Ehrlich. These researches, starting with and brilliantly solving the problem of the exact evaluation of sera for practical use, led him to enunciate those conceptions of the mechanism of the immune reaction which have furnished the stimulus for and fixed the direction of an enormous proportion of recent work on the subject.

"Active" and "passive" immunity

From this brief summary of the results, which man, with such patience and ingenuity, has achieved in recent years over these insidious enemies of his well-being, some idea of the value of inoculative treatment may be estimated. Serum treatment is but as yet in its infancy, and its possibilities in the future are great. The success that has followed its employment in modern times promises that it may eventually prove one of the most helpful branches of the healing art, especially in combating some of the most terrible diseases with which mankind is afflicted.



"THE ADMIRABLE EFFECTS OF VACCINATION"

From a French caricature

THE HERB GARDEN
'WELLCOME' MATERIA MEDICA FARM

THE HERB GARDEN
'WELLCOME' MATERIA MEDICA FARM
Another view

The Herb Garden is an annexe to the 'Wellcome' Materia Medica Farm at Dartford, near London, England. In it are grown specimens of medicinal plants and herbs. Each specimen is carefully indexed for reference.

Reproduced from photographs developed with 'Tabloid' Photographic Chemicals.

A Field of Datura Metel

Recent investigation has shown that *Datura metel* contains Hyoscine, Hyoscyamine and Atropine, in proportions differing from those occurring in other solanaceous plants.

Datura Stramonium

The vigorous growth of *Datura stramonium* cultivated on the 'Wellcome' Materia Medica Farm, is evidenced by comparison with the erect figure in the photograph.

Reproduced from photographs taken on the 'Wellcome' Materia Medica Farm, and developed with 'Tabloid' Photographic Chemicals.

THE 'WELLCOME' MATERIA MEDICA FARM

A MODERN PHYSIC GARDEN

In one of the numerous prefaces to his *Book of Plants*, John Gerarde, author of the first English Herbal, speaks of erecting "the laboratory of an industrious Chimist by the sweet garden of flourishing simples" in Holborn.* Where the "sweet garden of flourishing simples" once was, the Chief Offices of Burroughs Wellcome & Co. now stand; and, hard by, the Wellcome Chemical Research Laboratories occupy a site in King Street. The day of gardens in Holborn is, however, long since past, and the 'Wellcome' Materia Medica Farm lies beyond the outer limits of the city's growth at Dartford, in Kent.

In the footsteps of Gerarde

Of his "sweet garden of simples" the old herbalist discourses like a lover, the while he reviews with philosophic insight, the advantages of the laboratory associated with it. "The Physicke reader," he avers, "by their meanes shall not only come furnished with authorities of the Antients and sensible probabilities for that he teacheth, but with real demonstrations also in many things which the reason of man, without the light of the fornace, would never had reached unto."

The philosophy of physicke gardens

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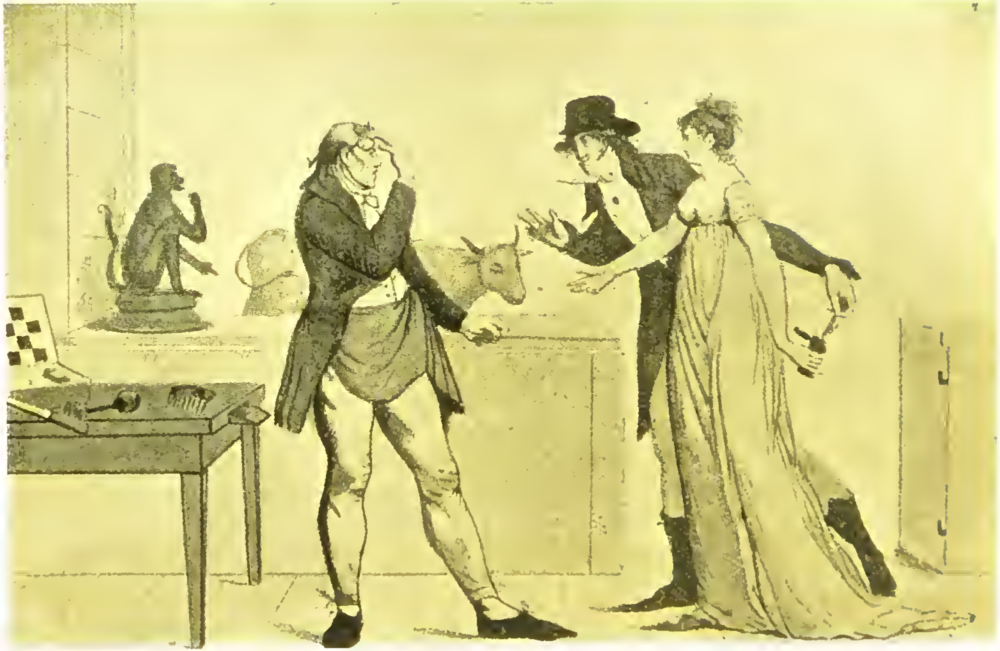
* London, England



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A FIELD OF DATURA METEL

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The philosophy of physicke gardens

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* London, England

Of Gerarde and his "Herbal"

Gerarde's *Herbal* is notable as containing the first picture and description of the true potato plant, introduced into England in the year 1597. Born "at Namptwich in Cheshire, from whence he came to this city and betooke himself to Surgery . . . and therein attained to be a Master of that worthy profession," Gerarde died in 1607. The groundwork of his *Book of Plants* is stated to have been a translation of "Dodonaeus his Pemptades comming forth anno 1583."

View-points

To be true to purpose, the physic garden must, in essence and in fact, make a laboratory of the open fields, and of this idea Gerarde had some conception. Having as its object the study, not so much of the dead and dried herb as of the living plant and the conditions which influence its growth and the development of its properties, constant experiment must needs be the medium of investigation. The mediæval view-point of disease as due to malign influences to be driven forth from the body by nauseous draughts, had led Luther to exclaim upon the "wonderful virtues" of "mere muck." To this crude conception succeeded the fanciful assumption that every plant bore some outward indication, in form or colour, of the disease it was supposed to cure—resulting, actually, in the practice of a confused polypharmacy. The acumen of the elder pharmacists consequently exhausted itself in minute pharmacognostic distinctions, and the evolution of interminable vegetable pharmacopœia. The plants, as grown, were accepted without question, innocent of assay, for the preparation of galenicals.

The isolation of alkaloids in the early part of last century exposed like a searchlight the futility of this, and revealed another and a deeper problem. The discrepancies in alkaloidal value and strength of active principles between different samples of the same plant, to all outward seeming alike, became evident; and, to these, pharmacognosy afforded no clue. A paper by Carr and Reynolds* illustrates at once the importance of assay and the need of devising measures to secure uniformity of content.

Serious discrepancies

It was found that one specimen of Squill was approximately three times as strong as another, while the amount of petroleum-ether-soluble alkaloid in Coca leaves varied from 0·018 per cent. to 0·79 per cent. Aconite, Belladonna herb, Calabar bean, Digitalis, Ergot, Hyoscyamus, Jaborandi and Strophanthus all showed wide variation, and in the case of Cinchona there was a difference between the highest and the lowest grades, bought on the actual market, of 3·87 per cent. of quinine and cinchonidine. In so far as variability of action must, of necessity, result from variability of content, these figures are significant of much.

Pioneers in standardisation, as in other departments of pharmacy, Burroughs Wellcome & Co. found their efforts hampered from the outset by these discrepancies. Control must obviously begin at the sources of production. The introduction of 'Wellcome' Brand Standardised Galenicals, therefore, led them to establish a scientific Materia Medica Farm near the 'Wellcome' Chemical Works at Dartford, with the twofold object of supply and experimental research—again a conjunction reminiscent of Gerarde.

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* Carr and Reynolds, *Pharm. Journ.* (Eng.), 1908, **80**, 542

By careful selection and propagation of the best stocks, by attention to the composition of the soil, by adaptation of stocks to soil and site, by collection of the plants at their period of richest yield, and so forth, it was sought to eliminate factors of variability and to obtain the most uniform results from the choicest strains.

A modern herb garden

The major portion of this 'Wellcome' Materia Medica Farm is devoted to the cultivation of staples, but an experimental section is maintained in constant activity. Belladonna, for instance, has been shaded during growth by various coloured fabrics, and treated with different fertilisers. In the course of these researches it was ascertained that the yield of alkaloid is affected more by climatic conditions than by other alterations in environment, and that the superiority of English leaves is due to the English climate. Experiments with Broom tops, again, proved that the amount of sparteine contained in them varies according to the time of year, being low during the flowering and growing period, and increasing during autumn and winter, when reproductive activity has ceased. The Digitalis required for the production of 'Wellcome' Brand Concentrated Tincture of Digitalis and 'Wellcome' Brand Extract of Digitalis is also grown at the 'Wellcome' Materia Medica Farm. The result is that variations in character of the leaves have been reduced to those necessarily due to the variations of season from year to year. Added to which, errors due to the inclusion of faulty or untrue specimens are avoided.

Experimental results

Advantages

Further advantages derived from this conjunction of experiment and research with the actual growing of the plants and the preparation of their galenicals are :—

(1) A drug may be expressed or worked up immediately it has been collected.

(2) Herbs may be dried directly they are cut, before fermentation and other deteriorating enzymic changes have set in.

(3) Caprice on the part of collectors—who, in gathering wild herbs, are very difficult to control in the matter of adulteration, both accidental and intentional—is prevented.

(4) It is possible to select and cultivate that particular strain of a plant which has been found by chemical and physiological tests to give the most satisfactory preparations. Notable instances are to be found in connection with Digitalis and Belladonna.

An article in the *Chemist and Druggist*, London (Eng.), of January 29, 1910, gives us an idea of this latest of "physicke gardens," situated

> "on an undulating slope, with here and there a clump of trees and a strip of wild woodland, between the river and the North Downs, hard by the little village of Darenth. No more ideal spot for a herb farm could have been chosen. It has shade, sunshine and moisture, and a fine loamy soil, varied by sandier uplands.
>
> "A visit to the farm shows that the greater part is devoted to the cultivation of staples; but a number of plots are used for experimental crops. Among such are meadow saffron (*Colchicum autumnale*), with its pale-purple flower. Lavender, peppermint, and French roses grow side by side. Senega and the unpretentious taraxacum, with its bright yellow petals, occupy other spaces. Ginseng, the root that plays so important a part in Chinese medicine, is also grown. *Podophyllum peltatum*, *Scopolia atropoides*, *Datura meteloides*, sea poppy (*Glaucum luteum*), and *Grindelia robusta*, are other plants that one does not usually find growing on a scale greater than the experimental; but the plots of *Hydrastis canadensis* are botanically and commercially the most interesting on the farm, in view of the fact that we are coming within measurable distance of the end of the natural supply from North America.

'TABLOID' MEDICAL EQUIPMENTS
AT THE NORTH POLE
APRIL 6, 1909

'TABLOID' MEDICINE CHEST

supplied to

REAR-ADMIRAL ROBERT EDWIN PEARY

Inset are photographs of Rear-Admiral Peary and one of eight tubes of 'Tabloid' products, the **only** medicines actually carried by him to the North Pole

MEDICAL EQUIPMENTS FROM POLE TO POLE

For refuge from the wintry Northern ocean, it was natural that the deep fjords of Norway should harbour a race as fierce as the storms that beat upon their stern headlands. With no compass to guide them, with only the sun and the stars to steer by, and naught but their intuitive sea-lore to preserve them, "unconscious that they were specially brave," these sea-worn adventurers battled with ice and storms and infinite hardships, and became, in Nansen's proud phrase, "the first explorers of the Northern Seas" and the earliest of ocean navigators. "They discovered the wide Arctic Ocean and its lands; they settled in the Scotch islands, found and colonised the Faroës, Iceland and Greenland—were the discoverers of the Atlantic Ocean and of North America," he tells us.

The earliest Arctic explorers

In the ninth century, there is mention of their Northern explorations in the Anglo-Saxon history of Alfred the Great.

In the tenth century, Norsemen from Thule,* under Eric the Red, reached and settled Greenland; and it is practically certain that Norsemen discovered North America about 500 years before Cabot and Columbus. "South of Greenland is Helluland, next to it is Markland, and then it is not far to Wineland the Good . . . ." the old Icelandic geography read. Helluland (*i.e.* Slate or Stone-Land) is identified with Labrador; Markland (*i.e.* Woodland) with Newfoundland; while, beyond the legendary Wineland—the Hy-Breasail of the Irish, and the Fortunate Isles of Isidorus—"no habitable land is found in this ocean, but all that is more distant is full

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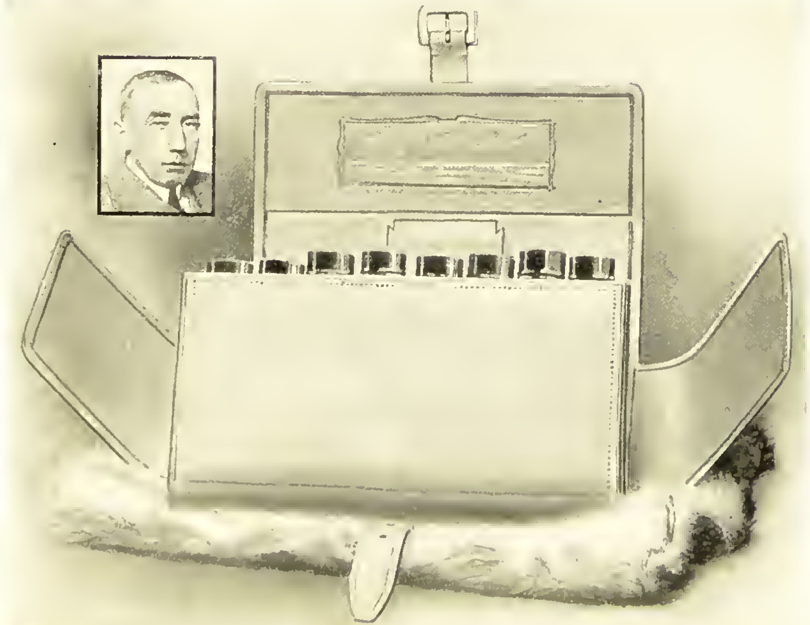
* Iceland



'TABLOID' MEDICAL EQUIPMENTS

AT THE SOUTH POLE

DECEMBER 14-17, 1911

'TABLOID' MEDICINE CHEST

supplied to

CAPTAIN ROALD AMUNDSEN

for his successful journey to the

SOUTH POLE

'Tabloid' products were the **only** medicines actually carried by Captain Amundsen to the South Pole.

Inset is a photograph of Captain Amundsen of intolerable ice and immense darkness. . . . ." Thus Svein Estridssen, King of Denmark and nephew of King Canute.

The North-West Passage and Polar exploration

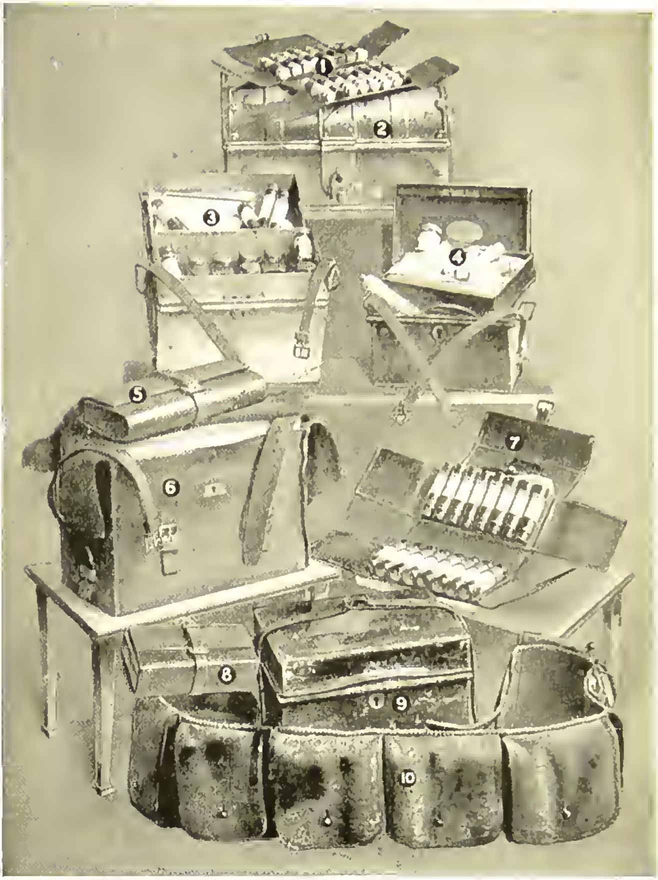
The "dark and curdled sea" which formed the outer boundary of the viking world, legendary though it be, had yet its natural prototype in the frozen ocean of the Arctic world, familiar to the early Norse adventurers; and the longed-for passage to the Wineland of the sagas has its historic parallel in the attempts to find a North-West Passage to the Southern "Indies," from which directly sprang attempts upon the Pole itself.

Franklin

Beginning with Cabot, Frobisher and Davis, the illustrious line continues through Hudson and Baffin; through Cook in a later day; through Scoresby (who touched 81° 30′ N.) and the Rosses to Parry, who, in 1827, made a determined effort to reach the North Pole from Spitzbergen, but was thwarted by the drift of the ice in 82° 45′ N. The tragedy of Franklin (1847), and the magic of that heroic narrative of "white men marching southwards" like ghosts in the frozen silence—"and as they walked along they fell down and died"—fill with splendour the middle period of the nineteenth century. During the search for Franklin, McClure actually made the North-West Passage in 1852. In 1871, Hall, in the *Polaris*, reached 82° 16′. In 1878, Markham, in search of open Polar sea, attained Lat. 83° 20′ N., by sleigh from Sir George Nares' expedition; and succeeding expeditions by Greeley and others added largely to the knowledge upon which was based the master-effort of Peary in 1909.

Preventable losses

The hardships of the early explorers and the wastage from disease fill a mournful page in human history. Not until Parry's day (the *Hecla*, 1819), do we find mention of successful medical precautions being taken on any expedition. 'Tabloid' Medical Equipments made it possible for the explorer to carry—on his own person



RELIC 'TABLOID' MEDICINE CASES—POLAR EXPLORATION

1—Scottish National Antarctic medicine case. 2—Chest used during three years' exploration by the Jackson-Harmsworth Arctic Expedition. 3—A duplicate of the chest carried by the Duke of the Abruzzi's Polar Expedition. 4—Part of the complete medical equipment supplied by Burroughs Wellcome & Co. for the National Antarctic Expedition, 1901. 5—Andrée, on his historical attempt to reach the North Pole by balloon, carried a case of this design. 6—Medicine case used by Wellman on his attempt to reach the North Pole in an airship. 7—Carried on the journey to the summit of Mount Erebus, and during the "Farthest South" journey, British Antarctic Expedition, 1907-9. 8—Case carried by the party which reached the South Magnetic Pole, British Antarctic Expedition, 1907-9. 9—Duplicate of the chest which formed part of Peary's equipment on his historic discovery of the North Pole. 10—Belt supplied to Nansen for his journey "Farthest North."

if need be—a sufficient supply of chosen remedies of real practical value. Nansen, for his famous voyage in the *Fram*, was supplied with 'Tabloid' Medical Equipments. First of the new vikings of modern Polar exploration, as daring as he was original, Nansen deliberately jammed his ship in the ice (September, 1893), in the hope of drifting across or near the Pole. In March, 1895, the *Fram* touched 84° N., and Nansen, with a companion, left her, and with the aid of dogs and kayaks reached 86° 14′—his "Farthest North." The belts and other 'Tabloid' Equipments supplied to Nansen now form part of Burroughs Wellcome & Co.'s historic collection of outfits. Of this equipment the explorer reported in enthusiastic terms.

Modern Medical Equipments

Nansen's "Farthest North"

Jackson-Harmsworth Expedition

Nansen was eventually picked up by the Jackson-Harmsworth Expedition, of whose 'Tabloid' Medical Equipment the surgeon in charge reported:—

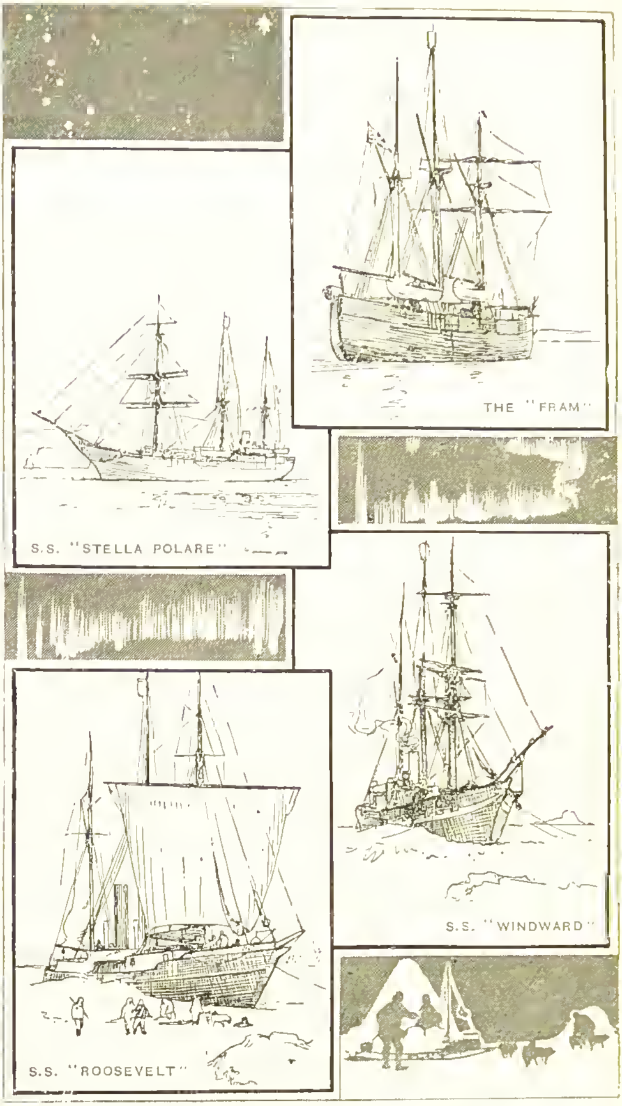
"I find the 'Tabloid' drugs are most convenient, especially in circumstances such as we are placed in."

Andrée

In 1907 Andrée, greatly daring, endeavoured to reach the North Pole by balloon, his sole medical outfit being a 'Tabloid' Medical Equipment. Starting from Spitzbergen on July 11, he vanished utterly; only his name and fame remain. A solitary carrier-pigeon bore the only message ever received from him.

The Duke of the Abruzzi

Nansen's "Farthest North" was ultimately surpassed by Captain Cagni of the Italian Arctic Expedition commanded by the Duke of the Abruzzi, 1899–1900. Despite the fact that latitude 86° 33′ 49″ N. was reached, the 'Tabloid' Medicine Chests and Cases with which the Expedition was equipped, were brought back with their contents quite unaffected by the rigour of the climate.



SHIPS OF THE NANSEN, DUKE OF THE ABRUZZI, JACKSON-HARMSWORTH, AND PEARY ARCTIC EXPEDITIONS, ALL EQUIPPED WITH 'TABLOID' MEDICAL EQUIPMENTS

Peary

In 1906 Peary penetrated beyond the 87th parallel, as far as 87 06′ N., and in 1909 completed the task "for which," he says, "I had worked during twenty-three years; for which I had lived the simple life; . . . for which I had trained myself as for a race." Pioneered by the faithful Bartlett as far as the 88th parallel, Peary then pressed on alone with the pick of his dogs and his best Eskimos, and, on April 6, planted the Stars and Stripes at the North Pole, as determined by astronomical observations.

'Tabloid' Equipments at the North Pole

One of the eight tubes of 'Tabloid' products carried by Peary to the North Pole was presented by the distinguished explorer to Burroughs Wellcome & Co. on his return. In a report, forwarded from Etah, Greenland, Peary wrote: "Burroughs Wellcome & Co.'s 'Tabloid' Medicine Cases and supplies have proven invaluable." And in a previous report he conveyed his "appreciation of the wonderful compactness and utility of your products."

First at the North Pole. First at the South Pole

First at the North Pole with Peary, the successful discovery of the South Pole by Amundsen adds yet another record to the credit of 'Tabloid' Medical Equipments, Amundsen having been supplied by Burroughs Wellcome & Co. with a 'Tabloid' Outfit for his perilous Antarctic venture. "It was splendid in every way," he reported.

Foresight

The narrative of Amundsen reveals a quiet, surprising courage, and an uncanny foresight and somewhat humorous outlook, in grappling with difficulties. He built 150 cairns on his way to the South Pole to serve as beacons and depôts for the return journey; he accumulated a store of 60,000 kilos of seal-meat at "Framheim"; he travelled far and fast on ski; and he found a new and comparatively easy route to hand. Dog-meat was voted "delicious."

An astounding success

Amundsen had acquired Nansen's old ship, the *Fram*, and his original intention was to fix her in the ice off the northern coast of Alaska and drift as near the North Pole as possible. Outward bound, news of Peary changed all his plans, and quietly, without harking back, he decided to be first at the South Pole. In all the history of exploration nothing was ever more astounding in its complete success. Favoured by conditions, the Pole was attained, after a rapid journey from the base, at an elevation of 10,260 feet, on December 14–17, 1911. The travellers suffered somewhat from the effects of altitude, the Antarctic continent being mountainous. Of his 'Tabloid' Outfit Amundsen reports :—

> " I have much pleasure in testifying to the efficiency of the 'Tabloid' Brand medical equipment with which you supplied me in 1910. All the medicines were most beautifully packed, and everything kept well.
>
> " The brown leather case which I returned to you was the only one which I actually carried with me to the South Pole, and I have much pleasure in sending it back to you as a souvenir of my journey.
>
> " I shall always consider one of your equipments as indispensable for either Arctic or Antarctic travels."

Roald Amundsen

In his book *The South Pole*, Captain Amundsen notes that this equipment was unaffected by cold and damp, and was the only medical equipment supplied to the expedition which did not deteriorate in any way.

"Double First"

'TABLOID' BRAND MEDICAL EQUIPMENTS were the **only** medical equipments actually carried to the Poles by the successful explorers. 'TABLOID' MEDICAL EQUIPMENTS were, therefore, **First at the North Pole** and **First at the South Pole.**

No such record can ever be repeated. Made once and for all time unique and unapproachable—the record stands, and of this honour, 'TABLOID' MEDICAL EQUIPMENTS can never be deprived.

Previous explorers

The history of Antarctic exploration prior to Amundsen is brief, and in it 'TABLOID' MEDICAL EQUIPMENTS vie, as it were, with their own record in the Arctic. The achievements of Captain Cook, who first crossed the Antarctic Circle in 1771; of Bellingshausen, who in 1821 first sighted Antarctic land; and of Sir James Ross, the discoverer of the Great Ice Barrier, and of Mounts Erebus and Terror on the Antarctic land mass (1841), need not detain us. Not until 1895 did any human being set foot on this virgin "Continent of Snows," when Borchgrevink landed from the *Southern Cross*. In 1901, Scott, in the *Discovery*, passed the eastern-most point attained by Ross sixty years before, crossed the Great Barrier—which he found thirty miles farther south than in Ross's day—and advanced 380 miles by sledge towards the Pole. This arduous journey occupied three months, and the record latitude of 82° 17′ S. was reached. On sledge journeys the question of weight is of great moment. The traveller, on such occasions, must carry but the barest necessaries, and of these the lightest procurable. The medicine chest is an important item. Every drug carried must be of the utmost reliability, in the most compact state, and capable of withstanding an extremely low temperature.

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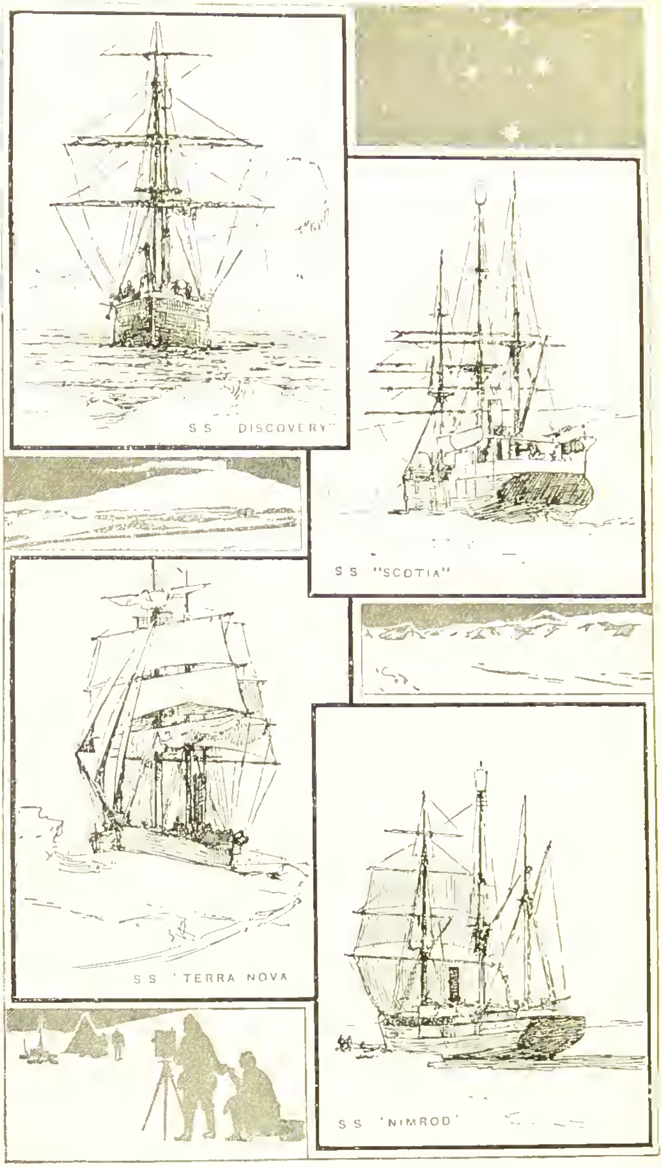


S S "DISCOVERY"

S S "SCOTIA"

S S 'TERRA NOVA'

S S 'NIMROD'

Ships of the National Antarctic Expedition, 1901, the Scottish National Antarctic Expedition, the British Antarctic Expeditions, 1907 and 1911, all equipped with 'Tabloid' Medical Equipments

To the enthusiasm of Sir CLEMENTS MARKHAM, K.C.B., then President of the Royal Geographical Society, the successful organisation of the Expedition is largely due. Referring to the 'Tabloid' Medical Equipment of the *Discovery*, he reports:—

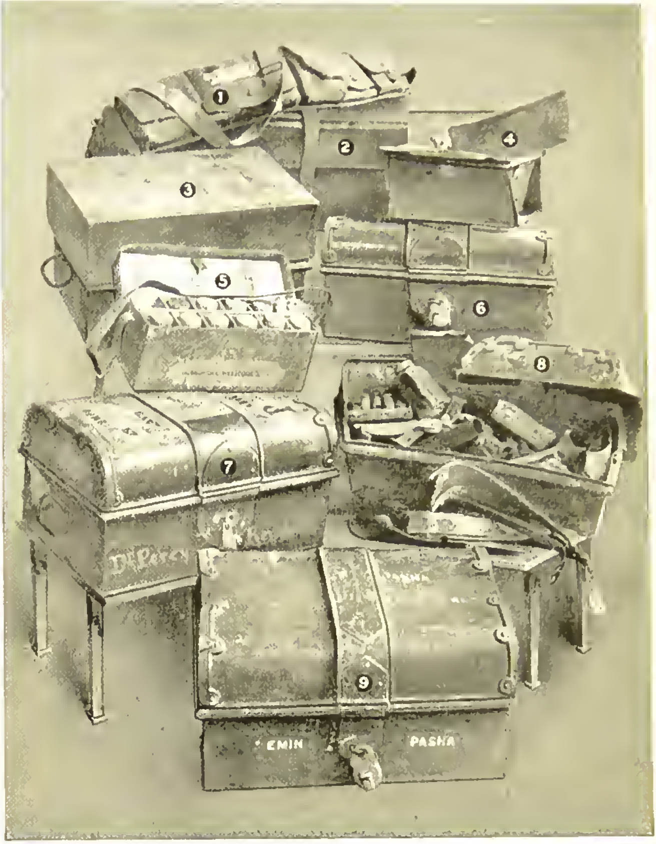
> "The Medical Equipment of the Exploring Ship of the National Antarctic Expedition was entirely supplied by Messrs. Burroughs Wellcome & Co., and proved in every way most satisfactory.
>
> "The few other drugs and preparations which were taken with the Expedition were only supplied for purposes of experiment, and can in no way be regarded as part of the medical equipment."
>
> Clements Markham

Dr. EDWARD WILSON who was in charge of some of the sledge journeys from the *Discovery*, reported:—

> "*Discovery* ANTARCTIC EXPEDITION
>
> "Though there was but little serious illness on the *Discovery* during the recent Antarctic Expedition, the 'Tabloid' preparations and the cases were put to a fairly rigorous test, not only in the ship, but on the various sledge journeys that were undertaken, during which they experienced temperatures as low as 68 below zero, and much rough handling, without any loss in efficiency and usefulness. Certain of the 'Tabloid' Ophthalmics were freely used for snow blindness, and were found to be most convenient."
>
> Edward A. Wilson

It will be remembered that Dr. Wilson accompanied Captain Scott upon his second Antarctic Expedition, in 1910, and perished with his leader during the tragic return journey from the South Pole in 1912.

To the Scottish National Antarctic Expedition, covering a period of nearly two years, and comprising two separate voyages of the *Scotia*, belongs the distinction of having attained the latitude of 74° 1′ S. The entire medical equipment of the Expedition was supplied by BURROUGHS WELLCOME & CO., and



Relic 'Tabloid' Medicine Cases—Africa

1—Medicine belt carried by Capt. Stairs throughout his Katanga Expedition. 2—The famous "Rear-Guard" medicine chest used during Sir H. M. Stanley's travels. 3—Extricated from the ruins after the Bandawe Mission House had been demolished by lightning; the contents that escaped damage were used for more than ten years afterwards. 4—Once the property of E. G. Glave. Supplied for a journey made concerning the great slave question of Central Africa. 5—Carried by Capt. Thomas Stevens on the expedition in East Africa to find Stanley. 6—Chest carried by Sir H. M. Stanley during the Emin Pasha Relief and other Expeditions. 7—Formerly the property of Dr. Percy Rendall, Principal Medical Officer, British Central Africa Administration. 8—Case carried by Frank Muxworthy, the famous African Caravan Leader, on three journeys through Uganda. 9—The last medicine chest supplied to Emin Pasha.

gave the utmost satisfaction, the Medical Officer of the *Scotia* reporting very favourably upon them.

In each instance the remaining contents of the medicine chests brought back were found to have retained their therapeutic activity, notwithstanding the rigour of the climate to which they had been subjected.

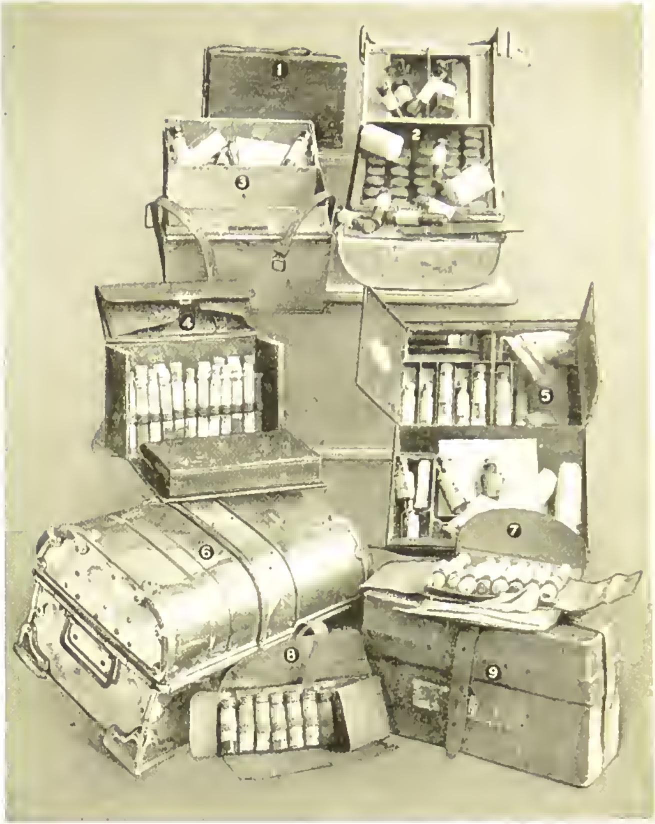
On his memorable voyage with the *Nimrod*, when he penetrated within ninety-seven miles of the South Pole, Sir ERNEST H. SHACKLETON took with him as his sole medical equipment 'Tabloid' Medicine Chests and Cases, and made the following report, showing the efficiency and stability of 'Tabloid' medicines under the trying and difficult conditions of Antarctic exploration:—

> "The British Antarctic Expedition, 1907–9, was equipped with a very complete Medical Equipment contracted for solely by Messrs. Burroughs Wellcome & Co., and consisting of 'Soloid' and 'Tabloid' Preparations, which are the only forms that can be conveniently carried and preserved under such conditions.
>
> "All the 'Tabloid' products that remain are now in as good condition as when first handed over to my care two years ago.
>
> *Signed*
>
> BRITISH ANTARCTIC EXPEDITION, 1907–9
> ERNEST H. SHACKLETON,
> *Commander*"

ERIC P. MARSHALL, M.R.C.S., L.R.C.P.
Surgeon to the Expedition

IN AFRICA

IN the penetration of Africa, 'Tabloid' Medical Equipments have made the way of the explorer and the pioneer infinitely less perilous. It is hardly too much to claim indeed that, but for their aid, civilisation had still been impotently besieging the frontiers of disease that defend the interior of the Dark Continent. There were no roads, the climate was deadly, and everything had to be carried pack-fashion on the



Relic 'Tabloid' Medicine Cases—Travel, etc.

1—Harry de Windt's medical equipment, used on his travels in E. Siberia. 2—Chest taken by Ex-President Roosevelt on his recent shooting and hunting expedition in East Africa. 3—Chest carried by Lionel Declé on his three years' journey from the Cape to Uganda (6000 miles). 4—Mrs. Bishop (Miss Isabella Bird), in her book describing her extensive wanderings, highly commends this medicine case. 5—The medical equipment carried by Mrs. French Sheldon, F.R.G.S., on her adventurous expedition throughout the entire Congo Free State. 6—Duplicate of medicine chest taken by Sven Hedin on his unique journey beyond the Himalayas into the heart of Tibet. 7—Case carried by R. L. Jefferson, F.R.G.S., on his famous bicycle ride to Khiva. 8—Pocket-case carried by J. E. Budgett Meakin. 9—Medicine chest carried by Julius Price, of the *Illustrated London News*, for over 30,000 miles through various climes.

human head and shoulders. With 'Tabloid' Medical Equipments, a single porter could carry medical supplies sufficient for a regiment of men. By their aid the European explorer was enabled to traverse deadly swamp and fever-ridden forest in safety. Stanley records the difficulty in these words:—

> "When I think [he said in one of his lectures] of the dreadful mortality of Capt. TUCKEY'S Expedition in 1816, of the NIGER Expedition in 1841, of the sufferings of BURTON and SPEKE, and of my own first two expeditions, I am amazed to find that much of the mortality and sickness was due to the crude way in which medicines were supplied to travellers. The very recollection causes me to shudder."

Speaking at a later date of his wish to ameliorate the miseries of African explorers, he continues:—

> "How it was to be done I knew not; who was to do it I did not know. But I made the acquaintance of Messrs. BURROUGHS WELLCOME & Co. As soon as I came in sight of their preparations and their works, I found the consummation of my secret wish. On my later expeditions I had all the medicines that were required for my black men, as well as my white men, beautifully prepared, and in most elegant fashion arranged in the smallest medicine chest it was ever my lot to carry into Africa."

Emin Pasha

The mention of Stanley recalls Emin Pasha, Gordon's Governor of Equatorial Africa. The last medicine chest supplied to him was the product of Burroughs Wellcome & Co. In a pathetic report he writes:—

> "I found the medicine chest you forwarded me fully stocked. I need not tell you that its very completeness made bound my heart. Articles like those could not be made but at the hand of the greatest artists in their own department. If any one relieved from intense pain pours out his blessings, they will come home to you.
>
> "I should like to expatiate somewhat longer on the intrinsical value, but sickness preventing me to do so. I wish you to believe me,"

Dr Emin Pasha

This chest was looted by the Arabs when Emin was massacred in 1892, and was recaptured by Baron Dhanis, Commandant of the Congo Free State troops, after the battle of Kasongo. It was subsequently stolen by natives, but afterwards recovered near Kenia, in the Aruwhimi Dwarf Country, and returned to Burroughs Wellcome & Co.

Another famous chest, the "Rear-Guard" 'Tabloid' Medicine Chest, remained in the swampy forest regions of the Aruwhimi for nearly four years, and more than once was actually submerged in the river. The remaining contents were tested by the official analyst of the *Lancet* (London, Eng.), when it was brought back to England, and the 'Tabloid' medicaments declared to have perfectly preserved their efficiency.

The tale might be continued. It is the history, practically, of the medical equipments of every punitive expedition and of every explorer for nearly 30 years. A single extract must suffice. It is from the report of the Special War Correspondent of the *Lancet* (London, Eng.), a veteran of many campaigns:—

Many campaigns

> "It affords me infinite satisfaction to state that I have myself for some years dispensed, and have also seen administered by medical officers of both Naval and Military Services, Burroughs Wellcome & Co.'s 'Tabloid' preparations during the Sudan, Ashanti, Benin, and recent South African Campaigns. I cannot refrain from expressing my opinions as to their distinct and marked superiority over the medicinal preparations of former days. They are far more portable, very acceptable so far as the palate is concerned, far less liable to absorb damp on service during rapid changes of climate, are always found exact as to their dose-weight, and, what is of far more importance, retain their efficiency much longer than any other medicinal products I know of. The firm of Burroughs Wellcome & Co. are deservedly to be congratulated upon the marked scientific advance they have made in pharmaceutical reform."

If, to-day, the savagery of all the welter of humanity that still hides in the darkness of darkest Africa, is receding—ever so slowly—before the march of Science, something is surely due to the 'Tabloid' weapons of precision with which disease and death have been fought.

The real problem of Africa

IN TRAVEL AND EXPLORATION

THE true traveller is born. The call of the beyond is in his blood. It may be merely the chafing of the restless spirit for a strange sky and a wider horizon; or the deeper longing of the reflective mind for something "over the hills and far away." Discontent has made travellers of some, desire for fame of others. In all, the result is action. Of one—a man of imagination and of magnetic qualities—Lord Morley has finely said, he was "a man with pity in him, with a sense of justice in him, with good-temper in him. . . . He raised no ill-will anywhere." Dr. Sven Hedin, of whom these words were spoken, for two long years wandered about the wildernesses of Tibet, tracing the "Mighty Mountain Palisade" of the trans-Himalaya and exploring the "Roof of the World." His constant companion was a 'Tabloid' Medicine Chest, which stood him in good stead in illness and hardship, and even in the primrose paths of diplomacy. At Shigatse he made it his offering of friendship to the Tashi-Lama. We are indebted to Messrs. Macmillan, Dr. Sven Hedin's publishers, for permission to quote his account of the incident:—

The born traveller

The "Roof of the World"

> "When we had conversed for two hours I made a move to leave him, but the Tashi-Lama pushed me back on to the chair and said, 'No, stay a little longer.' Now was the time to present my offering. The elegant English medicine chest was taken out of its silk cloth, opened and exhibited,

'Tabloid' Medicine Chest

supplied to

Ex-President Roosevelt

for his

Hunting Expedition

in

Africa

Inset is a photograph of
Ex-President Roosevelt

and excited his great admiration and lively interest: everything must be explained to him. The hypodermic syringe in its tasteful case, with all its belongings, especially delighted him. Two monks of the medical faculty were sent for several days running to write down in Tibetan the contents of the various 'Tabloid' boxes and the use of the medicines."

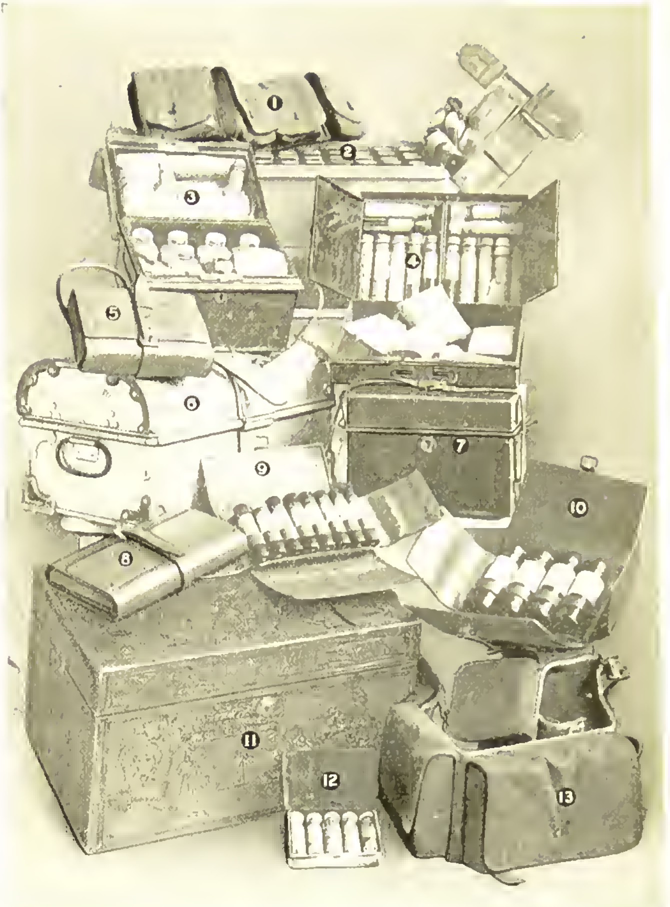
In Abyssinia

Such picturesque incidents do not stand alone in the annals of Burroughs Wellcome & Co. The U.S.A. Mission to Abyssinia in 1903—the first American expedition to that Empire—found their 'Tabloid' Medicine Chest "a highly valued resource in time of trouble. It was carried on the back of a faithful domestic, rejoicing in a name which, being translated, means 'Slave of the Holy Trinity'"—reports a member of the Commission.

Again, Professor Garner, who studied at close quarters the habits of gorillas in the forests of the Gabuns, speaks affectionately of "my little 'Tabloid' Medicine Chest" as "a treasure more sacred than my rifle."

Some travellers of distinction

Ex-President Roosevelt, on his African expedition, took with him the 'Tabloid' Medical and Photographic Equipment, of which Lieut.-Col. Mearns reports:—"I wish to inform you that the equipment was most satisfactory in every way. The 'Tabloid' and 'Soloid' products, in addition to being convenient and compact, are extremely accurate and reliable. In this expedition the equipment never failed us, and is the most practicable it has been my pleasure to see or use." Many other travellers of distinction, including Glave, Muxworthy, Rendall, Captain Stairs, W. S. Caine, Mrs. Bishop (Miss Isabella Bird), and Mrs. French Sheldon, have been equipped with 'Tabloid' Medicine Cases, and have reported favourably on their portability and reliability.



Relic 'Tabloid Medicine Cases Warfare

1—One of the medicine belts used during the Spanish-American War. 2—One of the medicine chests used in the Ashanti Campaign, 1895-6. 3—G. W. Steevens carried this equipment through many campaigns and journeys. 4—A relic of many battles and sieges, formerly the property of W. Maxwell, war correspondent. 5—Cases of this design were used by British Colonial contingents during the South African War. 6—Part of the medical equipment of Greece during the war with Turkey, 1897. 7—Duplicate of the medical equipment of Bennet Burleigh, war correspondent. 8 The portable medical supply used on the Dongola Expedition. 9—A duplicate of the equipment used during the Anglo-Egyptian campaign in the Sudan. 10—A specially-designed case carried by the C.I.V. in the South African War. 11—A specially-designed chest, part of the medical equipment entirely supplied by Burroughs Wellcome & Co. for the Hospital Ship "Maine. 12—Pocket medicine case carried by Gen. Viljoen throughout the South African War. 13—Medicine belt used during the Benin Campaign.

In Warfare

To Military Expeditions, 'Tabloid' Medical Equipments are as indispensable as the emergency ration. Their compression, compactness and convenience meet the first requirements of successful transport. In addition, they possess such advantages as purity, reliability and accuracy of dosage.

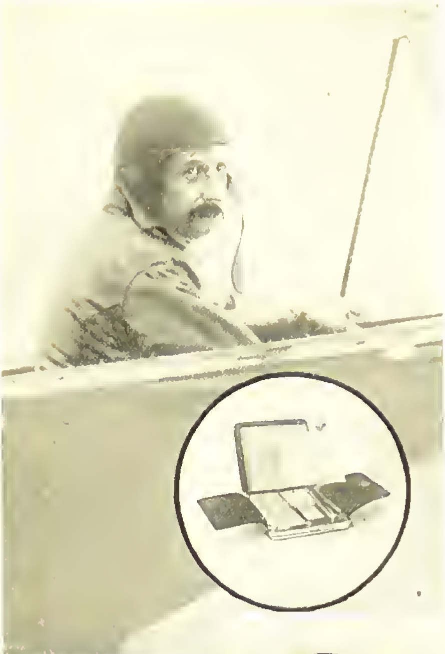
The human factor in warfare requires, for efficiency, first to be fed, next to have its hurts and ailments tended. It is a well-known axiom of military operations that disease kills more men than do the bullets of the enemy. Many of the horrors of the Crimean War might have been averted had 'Tabloid' medicaments been available.

The human factor and 'Tabloid' First-Aid

For more than a generation past, 'Tabloid' Medical Equipments have been used in every campaign of note. It is therefore impossible to deal with them in detail. During the war between the United States of America and Spain the utility of 'Tabloid' Outfits was tested and confirmed both in Cuba and the Philippines. In the campaigns of Kitchener, from Omdurman to South Africa, they have played a prominent part; as also in the Civil War in China.

In these days, no war seems to be complete without its war correspondents—than whom no keener judges of kit and equipment exist. The list of eminent journalists who have carried 'Tabloid' Cases includes among other world-famous names, those of Bennet Burleigh, Frederick Villiers, René Bull, Julius Price and William Maxwell, the late G. W. Steevens, and a host of others. Of her husband's 'Tabloid' Outfit Mrs. Steevens reports:—

> . . . . "He took it everywhere with him—to the Græco-Turk War, twice to the Soudan, India and lastly (well replenished by you) to South Africa."



LOUIS BLERIOT

Louis Blériot was the first airman to fly across the English Channel (Calais-Dover, July 25, 1909), using a Blériot monoplane. Inset is the aviator's 'Tabloid' First-Aid Equipment. He reports as follows:—

"I find 'Tabloid' First-Aid Outfits most useful, and I have seen them in the hands of many of my friends, who, like me, think that no sportsman can run the risk of being without one."

L Blériot

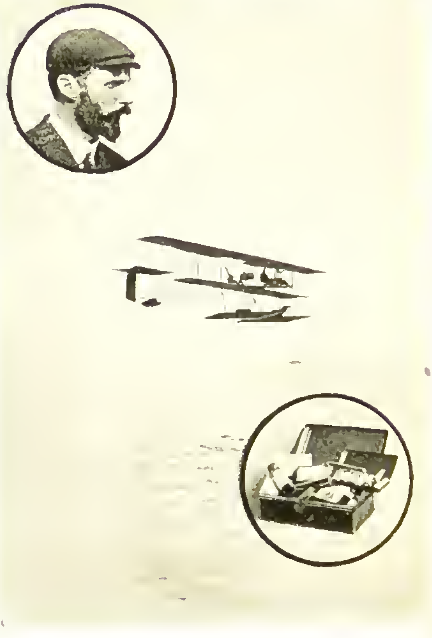
HENRI FARMAN AND HIS HYDROPLANE

Equally famous as airman, designer, and constructor of aeroplanes and hydroplanes. Writing in Esperanto he reports:—

Translation

"I find it very necessary for every aviator to have with him one of your 'Tabloid' First-Aid Cases, and to know Esperanto. With these two he can go anywhere.

"Fortunately I can say that I have not yet had a serious accident, but, working on the various apparatus, I have hurt myself several times, and was then glad to use the 'Tabloid' case, which saves much valuable time."



IN AVIATION

Perils of the air

Increase the margin of safety

"FLYING resolves itself into a series of unforeseen incidents. It is then that we must command our nerves to avoid *un drame*," writes one of the greatest aeronauts of the day. "Even the least stirring of the air grips the machine and rolls it gently from side to side, while the stopping of the motor gives an acute if momentary pang of despair." Lost in the clouds, fog-bound, tempest-tossed, compelled in his huge kite to rush onwards through the obscure in order to preserve equilibrium and remain aloft—not knowing when he emerges whether he will find himself above the plain-lands, the streets or the sea—the instant emergency constantly confronts him, far, possibly, from any hope of human aid. The margin of safety to life and limb must be increased, not only by improving the powers of the machine, but by the provision of the essentials of treatment in its most readily accessible form—compact, reliable, and practically featherweight. The airman who ventures aloft without 'Tabloid' First-Aid is foolhardy.

The first airman to deliver letters

The first airman to deliver letters by aeroplane (Paris-Madrid) was Védrines. In crossing the Pyrenees, Védrines had to rise to a height of over 6000 feet (2000 metres) in order to surmount the pass of Somosierra. During this flight he was attacked by an eagle.

Aviation in India

In India, Pécquet (February 18, 1911) carried a whole mail of 6000 letters and postcards from Allahabad across the Jumna to Naini. Pécquet and Keith-Davies will be remembered as the first airmen to fly in India. Of 'Tabloid' First-Aid, Pécquet reports:—

> "J'ai toujours emporté avec moi l'équipement Premier-Secours 'Tabloid,' et puis vous confirmer qu'il m'a toujours été de très grande utilité aux petits accidents que j'ai eus."

H Pecquet

"BEAUMONT"

Naval-Lieut. Jean Conneau, better known under the *nom de vol* of "André Beaumont." Won the European Circuit Race, and also the *Daily Mail* $50,000 prize for the Circuit of Britain. He is seen examining 'Tabloid' First-Aid, No. 706, concerning which he reports:

"Grâce à sa légèreté et son format la petite boîte 'Tabloid' First-Aid se recommande spécialement aux aviateurs."

J. Conneau

VÉDRINES

Jules Védrines won the Paris-Madrid race in 1911, and was second in the *Daily Mail* $50,000 Air Race in 1911. In Jan., 1912, he attained a speed of $105\frac{1}{2}$ miles per hour—a world's record. The photograph shows the aviator handling his 'Tabloid' Pocket-Outfit, concerning which he reports:—

"Je considère votre Premier-Secours 'Tabloid' comme très utile. Son peu de volume en fait un modèle d'une extrême commodité."

J. Védrines

British and American Aerial Posts

Mails have also been carried in England by Hamel and Hubert (between Hendon and Windsor), and in America by Earle Ovington. 'Tabloid' First-Aid Equipments were used on all these journeys. Earle Ovington, under the personal direction of Postmaster-General Hitchcock, carried the first U.S.A. Government Aerial Post.

The mail of the future

Captain Sido also took a 'Tabloid' First-Aid Equipment with him when he set out to establish a rapid postal service in French Senegal. These aerial experiments are interesting, though there is still much leeway to be made up before Kipling's daring forecast of a trans-Atlantic Aerial Post is realised.

Prominent aviators

Prominent among other aviators who have carried 'Tabloid' First-Aid Equipments during their flights are Blériot—first to fly the English Channel; Ely, who flew across San Francisco Harbour, landing like a bird on the deck of the cruiser "Pennsylvania," and flying back again to land; as well as Weymann, who won the Gordon-Bennett Cup for America in 1911; Fowler, who was saved at Alta from serious injury to limb in falling, by the 'Tabloid' Equipment he carried in his pocket; McCurdy, Sopwith, Tabuteau, Garros, Hubert Latham and very many others, from whom reports have been received. Latham reported as follows of his 'Tabloid' Equipment:—

> "Je tiens à vous dire combien m'a été utile votre trousse de Premier-Secours 'Tabloid.'
>
> "Elle est si peu volumineuse que je n'hésite jamais à l'emporter en aéroplane, et m'a rendu service plusieurs fois, surtout dans les meetings d'aviation où un pansement rapide est souvent nécessaire. Bien à vous."

H Latham

OVINGTON

Earle L. Ovington was the first man to carry the official United States mail in America. He was accompanied by Postmaster-General Hitchcock of the U.S.A. Government on one of his mail-carrying trips. Of his 'Tabloid' First-Aid equipments Mr. Ovington reported as follows:

"I shall carry 'Tabloid' First-Aid Outfit with me on my trans-continental flight the two smaller outfits on my aeroplane and the larger one on my special train. I have looked these outfits over very carefully and wish to compliment you upon the wonderful compactness and efficiency of your products."

VOISIN

Gabriel Voisin was one of the pioneers of aeroplane and hydroplane construction, and is himself an accomplished aviator. He reports on his 'Tabloid' First-Aid Equipment as follows:

"Nous avons bien reçu votre boite de secours dont nous avons usé le jour même.

"Je dois dire que votre pharmacie est parfaitement complète et qu'elle a sa place dans toutes les voitures automobiles, et tous les aéroplanes."

Gabriel Voisin

Paulhan, after his race through darkness against time and his competitor, Grahame-White, in the *tour de force* flight from London to Manchester (*Daily Mail* $50,000 prize, 1910), made the following report:—

> "Je profite de cette occasion pour vous exprimer le plaisir que j'ai eu de porter avec moi durant le vol que j'ai fait de Londres à Manchester une trousse Premier-Secours 'Tabloid.'"

L. Paulhan

Lieutenant Watkins, who was prevented by a broken leg from accompanying the Australian Antarctic Expedition, 1911, as official aviator, made the following report:—

> "Fortunately for myself I have had no occasion to use the small 'Tabloid' First-Aid you so kindly sent me, but a friend of mine, Dr. Pointer, R.A., who has been in aviation for many years, had a bad fall on his monoplane and was badly cut in many places. Your small outfit came in most handy. I consider that the 'Tabloid' Equipment you sent me for the Vickers monoplane is quite the most useful thing one could desire."

The rôle of the "dirigible"

The relative qualities and superiorities displayed, and the functions to be fulfilled respectively by heavier-than-air and lighter-than-air machines, continue to excite expert controversy, and even to influence the policy of governments. The evolution of a dominant type remains upon the knees of the gods. Whatever issue may emerge, the endeavour of Burroughs Wellcome & Co. will always be to maintain the historic association of their products with the evolution of scientific airmanship.

Great in conception was Wellman's effort to cross the Atlantic, on which the explorer brought

GRAHAME WHITE

Claude Grahame-White made a plucky attempt to win the first *Daily Mail* $50,000 prize, for a flight from London to Manchester in 1910. He won the Gordon-Bennett Cup for England at Belmont, N.Y., in the same year, on a Blériot monoplane. Made the first crossing of the Channel by hydro-aeroplane, July 6, 1912. Concerning his 'Tabloid' Equipment, he reports:—

". . . I consider no aviator should be without one."

C Grahame-White

CODY

S. F. Cody has done important work for the British War Office, and uses aeroplanes of his own design. Winner of the British Michelin Trophies in 1910 and 1911, the British Empire Michelin Cup, No. 2, in 1911, and the British War Office Competition, 1912. He carries 'Tabloid' First-Aid as his medical equipment. Mr. Cody reports as follows:—

"The 'Tabloid' First-Aid Case has always been in its place on my machine and I have found the contents of inestimable value on numerous occasions."

The arrow indicates the position of the 'Tabloid' First-Aid.

to bear immense pains and forethought, and all the experience of his Arctic travels. The result revealed a task pre-destined to ultimate achievement. Wellman reports:

> "We are glad to inform you that your 'Tabloid' Medical Equipment was the only one carried in the airship "America" during one thousand miles flight over the Atlantic Ocean. We had several occasions to use its contents for minor troubles, and found it complete and wholly satisfactory, which was but repeating the experience I have had with your equipments in my expeditions to the Arctic regions."

Walter Wellman

Mr. Wellman here refers to his 'Tabloid' Equipment for the dirigible "America," with which he had proposed to fly to the North Pole from Spitzbergen.

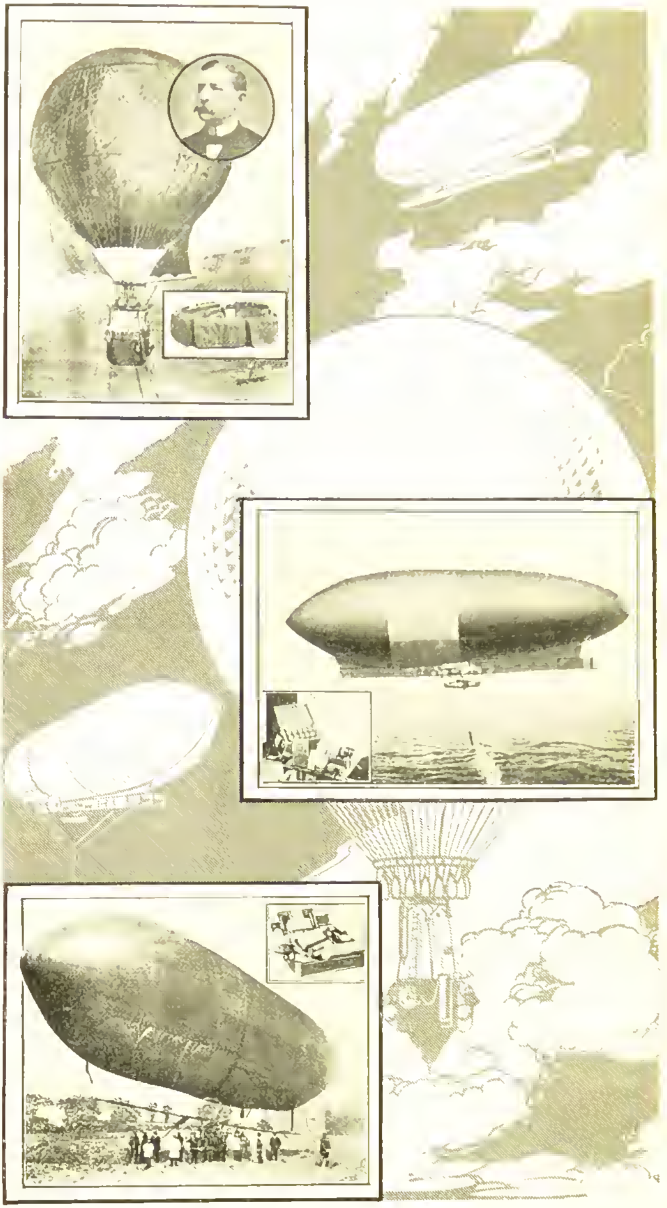
The British record for a long-distance balloon voyage is held by Messrs. Gaudron, Maitland and C. C. Turner, who, on November 18, 1908, started from the Crystal Palace, London, and on the following day alighted at Mateki Derevni, Novo Alexandrovsk, Russia, having travelled 1117 miles in 31½ hours. Their sole medical equipment was a 'Tabloid' Medicine Case, of which Mr. Turner reports:—

> "The 'Tabloid' First-Aid Aeronaut's Outfit proved most valuable during our balloon voyage to Russia. We used the 'Vaporole' Ammonia with excellent results when suffering from the presence of gas in the air. But for the other remedies we should probably have suffered considerably. In future voyages I shall certainly take a 'Tabloid' First-Aid Outfit."

Charles C. Turner

(Cert. Av.)

'Tabloid' Medicine Chests and 'Tabloid' First-Aid Equipments have also been supplied to Willows, Count Zeppelin, and many other aeronauts.



BALLOON AND AIRSHIPS FITTED WITH
'TABLOID' MEDICAL EQUIPMENTS
1—Andree's Polar Balloon 2—Wellman's Airship "America"
3—Willow's Airship

HYPODERMIC POCKET-CASES
'TABLOID' BRAND

[® B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

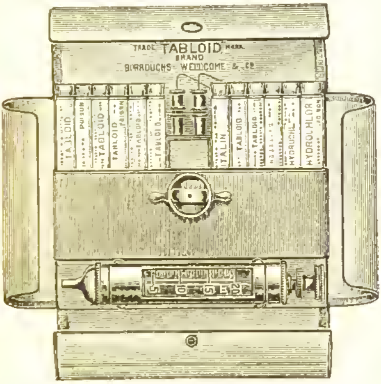
The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'TABLOID' Hypodermic Pocket-Cases provide complete armamentaria for hypodermic work. The whole object of hypodermic medication is to administer drugs in full physiological dosage by the shortest route. It is, therefore, *par excellence*, the method for emergency purposes. For the same reasons it follows that the highest accuracy of dosage combined with the utmost purity of the drug administered is essential. 'Tabloid' Hypodermic Products possess all these qualities and are compact, convenient to use, and free from the disadvantages of stock solutions, which may undergo rapid changes and become septic and irritating. They retain their strength, and remain unaltered for many years in any climate. A full equipment of hypodermic drugs, together with syringe and needles, may, by means of the 'Tabloid' Hypodermic Outfit, easily be carried in the waistcoat pocket.

For the waistcoat pocket

Hypodermic 'Tabloid' Brand Pocket-Cases are issued in gold, silver, gun-metal, nickel-plated metal, or aluminium, and in a great variety of plain and fancy leathers. Each contains a B. W. & Co. Hypodermic Syringe with needles, and from five to fifteen tubes of 'Tabloid' Brand Hypodermic products, etc.

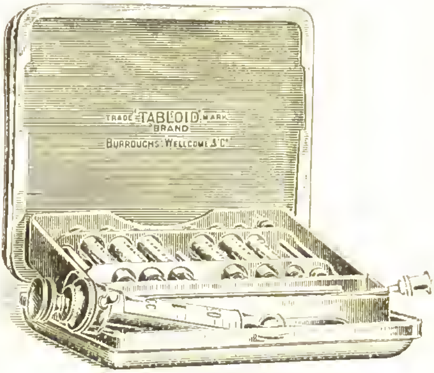
NO. 3. HYPODERMIC 'TABLOID' BRAND POCKET-CASE



In Cowhide, Pigskin, Crocodile, Morocco, Seal and other fine leathers. Fitted with twelve tubes of 'Tabloid' Hypodermic products, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe and two regular steel needles.

No. 3. Hypodermic 'Tabloid' Brand Pocket-Case
Measurements 3¼ × 2¾ × ¾ in

NO. 7. ASEPTIC HYPODERMIC 'TABLOID' BRAND POCKET-CASE

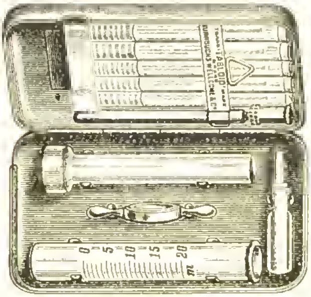


No. 7. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case
Measurements $3\frac{1}{2} \times 3\frac{1}{8} \times \frac{7}{8}$ in

With special detachable aseptic frame of novel design, and revolving rack (nickel-plated). Fitted with twelve tubes of 'Tabloid' Hypodermic products, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, with two regular steel needles, etc. This Case, after the removal of the tubes of Hypodermic products, may be sterilised with ease. In Aluminium, or in Solid Silver.

NO. 10. ASEPTIC HYPODERMIC 'TABLOID' BRAND POCKET-CASE

This Case is a model of compact completeness. It is made of nickel-plated metal, each edge and corner being smoothly rounded. It contains a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, with detachable nickel-plated finger-grip, and two regular steel needles enclosed in a protective tube.



No. 10. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case

Measurements $2\frac{1}{2} \times 1\frac{3}{8} \times 1$ in

Each part of the syringe is separately held in a holdfast clip.

The tubes of 'Tabloid' Hypodermic products, five in number, are carried in a hinged rack, which securely holds them when the case is closed, and which, when swung outwards, allows of the easy withdrawal of the desired tube. Complete with doeskin cover.

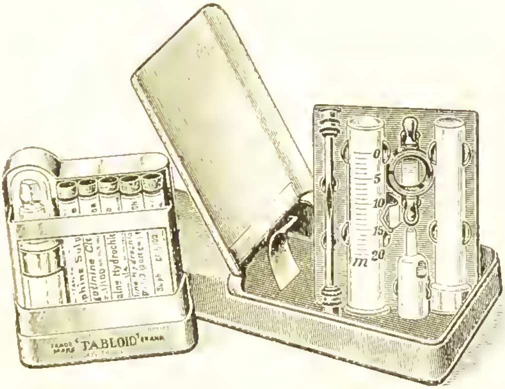
NO. 15. ASEPTIC HYPODERMIC 'TABLOID' BRAND POCKET-CASE

In polished metal, with doeskin cover. Measurements: 4 × 3 × $\frac{7}{8}$ in. Fitted with a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, with two platino-iridium needles and one exploring needle, eight tubes of 'Tabloid' Hypodermic products, two 'Vaporole' products (for hypodermic use), a stoppered bottle, sterilising cup, forceps, etc. The syringe is held in a separable tray in which it may be sterilised.

In place of a spirit-lamp a tube of inflammable products is provided. One of these may be burned for sterilising the syringe or solution.

NO. 20. ASEPTIC HYPODERMIC 'TABLOID' BRAND POCKET-CASE

Fitted with ten tubes of 'Tabloid' Hypodermic products, a small glass phial, stoppered and capped, for ether, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe (each part securely held in a separate clip), with two steel needles in a protective tube, finger-grip, etc. In nickel-plated metal, complete with doeskin cover.

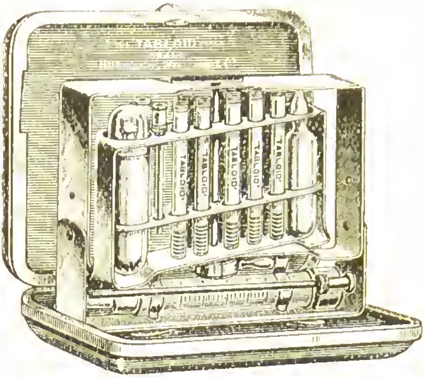


NO. 20. ASEPTIC HYPODERMIC 'TABLOID' BRAND POCKET-CASE
Measurements . $4\frac{1}{2}$ × $1\frac{3}{4}$ × $\frac{3}{4}$ in.

NO. 21. HYPODERMIC 'TABLOID' BRAND POCKET-CASE

Measurements : $3\frac{7}{8}$ × $3\frac{1}{4}$ × $1\frac{1}{4}$ in. Fitted with nine tubes of 'Tabloid' Hypodermic products, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, with two steel needles, a small phial, glass-stoppered and capped, for sterilised water, capsule of ether, etc. In Morocco and other fine leathers.

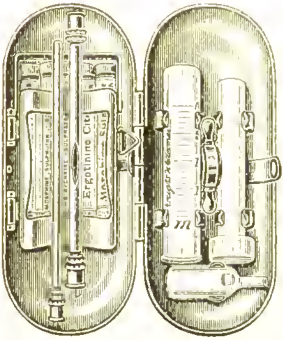
No. 23. Aseptic Hypodermic 'Tabloid' brand Pocket-Case



In Aluminium, Gun-metal or in Solid Silver, with special detachable nickel-plated aseptic frame and revolving rack. Contents same as those of No. 21 Case, with the addition of a steel exploring needle. This Case, after the removal of the tubes of 'Tabloid' Hypodermic products, may readily be sterilised.

No. 23. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case
Measurements 3½ × 3⅛ × ⅞ in

No. 40. Aseptic Hypodermic 'Tabloid' brand Pocket-Case (*The Mussel Shell*)



A particularly efficient and convenient pocket-case. Its component parts are held securely in clips and rack. The spring catch, of improved design, is most effective in use, whereby maximum security is attained. The case contains a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, with detachable finger-grip, two regular steel needles, one exploring needle, and five tubes of 'Tabloid' Hypodermic products, etc. In nickel-plated metal, complete with doeskin cover.

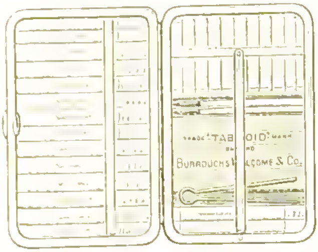
No. 40. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case
(The Mussel Shell) Measurements 3½ × 1⅝ × 1 in.

No. 45. Quinine Injection 'Tabloid' brand Pocket-Case

Measurements: 5¼ × 2⅞ × 1¼ in. Fitted with an All-Metal Hypodermic Syringe, min. 20, with two steel needles, two ½ oz. bottles, stoppered and capped, spirit-lamp, sterilising cup, sterilising tray, box for matches, etc., wind-shield, forceps, one tube 'Soloid' Corrosive Sublimate, and three tubes 'Tabloid' Hypodermic Quinine Bihydrochloride. In nickel-plated metal, complete with doeskin cover.

HYPODERMIC AND OPHTHALMIC POCKET-CASES 'TABLOID' BRAND [⌗ B. W. & Co.]

No. 80. HYPODERMIC AND OPHTHALMIC 'TABLOID' BRAND POCKET-CASE *(The "British Army Regulation")*



In Aluminium. Contains thirteen tubes of 'Tabloid' Hypodermic products, ten tubes of 'Tabloid' Ophthalmic products, two camel-hair brushes, a pair of minute forceps, and a card showing list of contents. Being easily carried in the waistcoat-pocket, this Case is extremely well adapted for emergency use.

No. 80. HYPODERMIC AND OPHTHALMIC 'TABLOID' BRAND POCKET-CASE
(The "British Army Regulation") Measurements 3¼ × 2¼ × ¾ in

OPHTHALMIC POCKET-CASES 'TABLOID' BRAND [⌗ B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

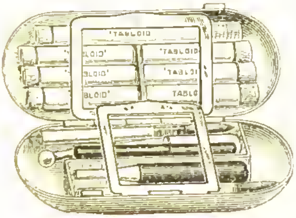
The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co.

'TABLOID' Ophthalmic Pocket-Cases are the most compact and complete equipments for ophthalmic work. In a space of two or three cubic inches they contain supplies of active and accurately-divided ophthalmic products, solution-dropper, camel-hair brushes, etc., etc.

No. 91. ASEPTIC OPHTHALMIC 'TABLOID' BRAND POCKET-CASE

In nickel-plated metal. Measurements: 2¼ × 1¼ × ¾ in. Fitted with nine tubes of 'Tabloid' and 'Soloid' Ophthalmic products in nickel-plated rack, vulcanite rod, solution-dropper, mortar, pestle and two camel-hair brushes. The Case, after the removal of the contents, may readily be sterilised. Complete with doeskin cover.

No. 92. ASEPTIC OPHTHALMIC 'TABLOID' BRAND POCKET-CASE *(The Mussel Shell)*



In nickel-plated metal. Fitted with seven tubes of 'Tabloid' Ophthalmic products, mortar, pestle, vulcanite rod, solution-dropper and two camel-hair brushes. The shape and size of this Case make it specially suitable for carrying in the waistcoat-pocket. After removal of the contents, the Case can readily be sterilised. Complete with doeskin cover.

No. 92. ASEPTIC OPHTHALMIC 'TABLOID' BRAND POCKET-CASE
(The Mussel Shell) Measurements 2½ × 1⅛ × ⅝ in

MEDICINE POCKET-CASES, 'TABLOID' BRAND

[B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

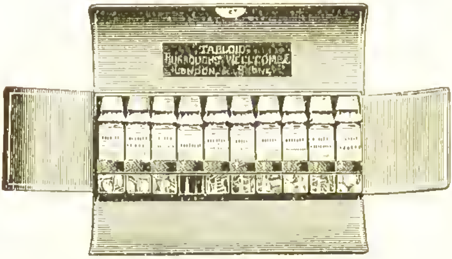
The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co.

'TABLOID' Medicine Pocket-Cases are compact equipments of pure, active drugs, divided into accurate doses, ready for administration. They enable practitioners to have always with them an equipment of reliable medicines specially suitable for emergency purposes. 'Tabloid' Pocket-Cases are a recognised essential in the equipment of physicians practising in country districts.

For emergencies

When weighing and measuring are impossible, and the carriage of liquids impracticable, the convenience and the extreme portability of 'Tabloid' Medicine Pocket-Cases, which enable the physician to dispense emergency medicines practically at the bedside, will be fully appreciated.

NO. 115. 'TABLOID' BRAND MEDICINE POCKET-CASE

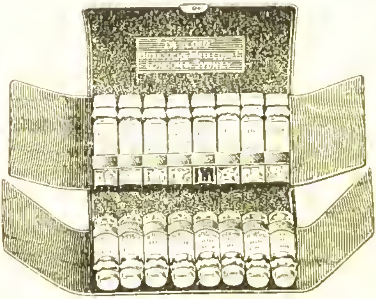


No. 115. 'TABLOID' BRAND MEDICINE POCKET-CASE

Measurements $9\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ in.

Contains ten $\frac{1}{2}$ oz. phials filled with 'Tabloid' Brand products, etc. In Seal, Pigskin, Cowhide, Morocco and other fine leathers.

NO. 117. 'TABLOID' BRAND MEDICINE POCKET-CASE

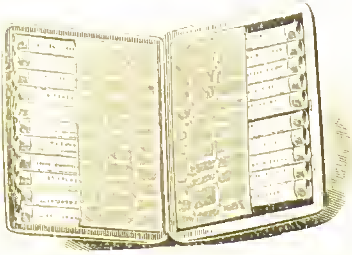


No. 117. 'TABLOID' BRAND MEDICINE POCKET-CASE

Measurements: $7\frac{1}{2} \times 4\frac{1}{2} \times 2\frac{5}{8}$ in.

This Case, which is somewhat larger and more comprehensive than the No. 115 Case, contains sixteen $\frac{1}{2}$ oz. phials of 'Tabloid' Brand products, etc. In Cowhide, Pigskin, Crocodile, Morocco and other fine leathers.

NO. 124. 'TABLOID' BRAND MEDICINE POCKET CASE



No. 124. 'Tabloid' Brand Medicine Pocket-Case
Measurements 5½ × 4 × 1½ in

Fitted with from sixteen to twenty-four tubes of 'Tabloid' Brand products, according to size of products. In Seal, Crocodile, Morocco and other fine leathers. This Case was specially designed for conveniently carrying in the breast pocket, on ordinary occasions, a stock of medicines sufficient to combat a variety of contingencies.

NO. 125. 'TABLOID' BRAND MEDICINE POCKET-CASE

No. 125. 'Tabloid' Brand Medicine Pocket-Case
Measurements 5½ × 4 × 1½ in

Specially fitted for emergency purposes with fourteen tubes of 'Tabloid' Brand products, and a removable tray containing an equipment of twelve tubes of 'Tabloid' Hypodermic products, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe and two regular steel needles. In Cowhide and other fine leathers.

NO. 126. 'TABLOID' BRAND MEDICINE POCKET-CASE

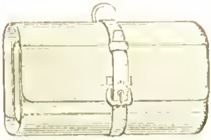
With the exception that it contains a No. 3 'Tabloid' Brand Hypodermic Case instead of the removable tray, this Case is the same as No. 125.

NO. 133. 'TABLOID' BRAND MEDICINE POCKET-CASE

An ideal pocket-case, which closes without straps or other external fastening. Metal body, covered with black Morocco or Cowhide. Contains eight ½ oz. phials of 'Tabloid' Brand products, etc., and wallet for papers.

No. 133. 'Tabloid' Brand Medicine Pocket-Case
Measurements: 6⅝ × 4¼ × 1¼ in

NO. 137. 'TABLOID' BRAND MEDICINE SADDLE-CASE



No. 137. 'TABLOID' BRAND MEDICINE SADDLE-CASE

In Cowhide or Pigskin. Measurements: 7½ × 4⅜ × 2½ in. Fitted in a similar manner to No. 117 Case (*see page* 164), with sixteen ½ oz. phials of 'Tabloid' Brand products, etc.

NO. 139. 'TABLOID' BRAND MEDICINE SADDLE-CASE

Similar to No. 137 Case, but fitted with feather-weight tubes. Measurements: 7¼ × 4½ × 2½ in. In Cowhide or Pigskin.

NO. 141. 'TABLOID' BRAND MEDICINE POCKET-CASE

In Morocco leather. Measurements: 7¾ × 4¼ × 2⅜ in. Fitted with fifteen ½ oz. phials of 'Tabloid' Brand products, and a compartment containing small boxes for the physician's use in distributing requisite medicaments. Design similar to No. 117 Case.

NO. 143. 'TABLOID' BRAND MEDICINE SADDLE-CASE

An ideal medicine saddle-case. Measurements: 8 × 3 × 4¼ in. It is so designed that, when closed, neither dust nor rain can enter. Two metal rings firmly fixed to the back of this equipment allow of its easy attachment to a saddle. Fitted with sixteen phials of 'Tabloid' and 'Soloid' Brand products and a removable tray for instruments, etc.

CYCLE, CARRIAGE AND MOTOR-CAR CASES MEDICAL EQUIPMENT CHESTS, ETC.

'TABLOID' BRAND

[卐 B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

For general practitioners

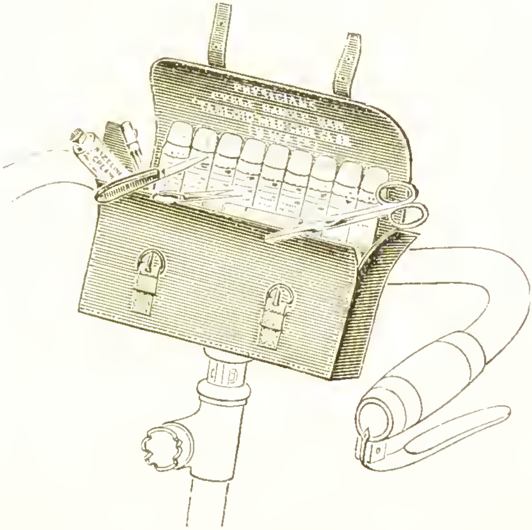
'TABLOID' Cycle, Carriage and Motor-Car Cases and Medical Equipment Chests contain 'Tabloid,' 'Soloid' and other fine products of B. W. & Co., minor surgical instruments and sundry emergency dressings. A great variety is prepared to meet the requirements of professional men in home practice, according to the extent and the special character of their particular requirements.

CYCLE, ETC., MEDICINE CASES, 'TABLOID' BRAND *continued*

'Tabloid' Medical Equipment Chests and Cases provide complete portable dispensaries for practitioners in distant stations, missionaries, explorers and expeditions of all kinds. For such purposes they are the only really satisfactory form of medical equipment, and have been universally adopted. In addition to full supplies of accurate doses of permanent and reliable products, these equipments contain minor surgical instruments and dressings.

For travellers, explorers, expeditions, missions, etc.

NO. 200. 'TABLOID' BRAND MEDICINE CASE
(Physician's Cycle Handle-Bar)



NO. 200. 'TABLOID' BRAND MEDICINE CASE (PHYSICIAN'S CYCLE HANDLE-BAR)

In black enamelled Cowhide. Measurements: 8¼ × 2¾ × 4⅜ in. Fitted complete with nine ½ oz. phials of 'Tabloid' Brand products, etc., minor surgical instruments and sundry emergency dressings. Weight, about 1½ lb.

NO. 202. 'TABLOID' BRAND MEDICINE CASE
(Physician's Cycle Stay-Bar)

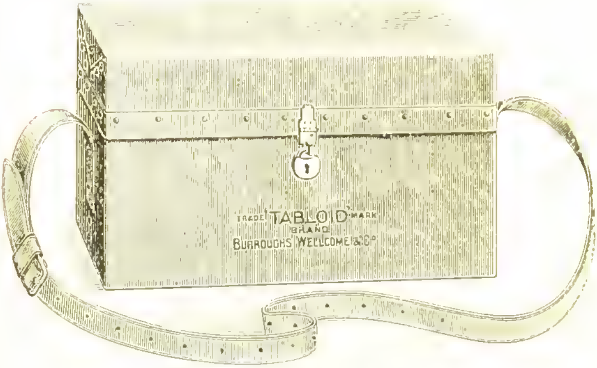
In black enamelled Cowhide. Measurements: 10 × 2¾ × 5 in. Fitted complete with twelve ½ oz. phials of 'Tabloid' Brand products, etc., minor surgical instruments and dressings. Similar in design to No. 200 Case.

NO. 206. 'TABLOID' BRAND MEDICINE CHEST

(*As carried by* Mr. THOS. STEVENS)

A reduced facsimile of No. 208 Chest (*see below*). Measurements 13½ × 4¼ × 7 in. Made of dressed and varnished raw-hide. Fitted with twelve 2½ oz. stoppered bottles of 'Tabloid' and 'Soloid' Brand products, minor instruments, dressings, etc.

NO. 208. 'TABLOID' BRAND MEDICINE CHEST



NO. 208. 'TABLOID' BRAND MEDICINE CHEST

Made of dressed and varnished raw-hide; very light, portable and durable. Measurements: 15½ × 5¼ × 9 in. Fitted with fourteen 4 oz. stoppered bottles of 'Tabloid' and 'Soloid' Brand products, instruments, dressings, etc.

NO. 209. 'TABLOID' BRAND MEDICINE CASE

In Morocco leather, Cowhide or Pigskin. Measurements: 10 × 5¼ × 6½ in. Contains nine 1 oz., twenty-four ½ oz. and thirteen 2 dr. phials of 'Tabloid' and 'Soloid' Brand products; medicine measure, extra pockets, and loops for instruments; twelve tubes of 'Tabloid' Hypodermic products, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, two regular steel needles, etc.

NO. 211. 'TABLOID' BRAND MEDICINE CASE

A very neat and durable case, with contents arranged so as to be instantly available for use. Measurements: 11½ × 5¾ × 5½ in. Contains nine 1 oz., twenty-four ½ oz., and twelve 2 dr. phials. Fitted with 'Tabloid' and 'Soloid' Brand products, twelve tubes of 'Tabloid' Hypodermic products, a B. W. & Co. Patent Nickel-plated Hypodermic Syringe, with two regular steel needles, etc. In Cowhide or Morocco leather.

NO. 216. 'TABLOID' BRAND MEDICINE CASE

In Cowhide or Morocco leather. Measurements: 10¼ × 5¼ × 3⅞ in. Fitted with nine 1 oz. and twenty-four ½ oz. phials of 'Tabloid' and 'Soloid' Brand products, loops for minor instruments, wallet for books, papers, etc.

NO. 219. 'TABLOID' BRAND MEDICINE CASE

In Morocco leather. Measurements: 13½ × 6 × 6¼ in. Metal frame. Contains eight 2 oz. stoppered, ten 1 oz., twelve 6 dr., eight 4 dr. and ten 2 dr. corked phials. The rows of phials are arranged to fall so as to show the labels. Fitted with 'Tabloid' and 'Soloid' Brand products, twelve tubes of 'Tabloid' Hypodermic products, a B. W. & Co. Patent Nickel-plated Hypodermic Syringe, with two regular steel needles, etc.

NO. 220. 'TABLOID' BRAND MEDICINE CASE

In Morocco leather or Cowhide. Measurements: 13¾ × 5¾ × 9¼ in. Phials arranged in tiers to display labels. Contains eight 2 oz. stoppered, twelve 1 oz., fourteen 6 dr., and sixteen 4 dr. phials of 'Tabloid' and 'Soloid' Brand products, twelve tubes of 'Tabloid' Hypodermic products, a B. W. & Co. Patent Nickel-plated Hypodermic Syringe, two regular steel needles, space and loops for instruments, etc. Similar in design to No. 221 Case.

NO. 221. 'TABLOID' BRAND MEDICINE CASE

In *extra finish* Cowhide, Morocco or Crocodile, and in Pigskin. Measurements: 14 × 6 × 9½ in. Fitted in the same way as No. 220 Case, with the addition of nine 2 dr. phials of 'Tabloid' and 'Soloid' Brand products, and a glass-stoppered and capped ether bottle.

NO. 222. 'TABLOID' BRAND MEDICINE CASE

In Cowhide. Measurements: 13¾ × 8 × 6 in. Contains eight 2 oz. stoppered, twelve 1 oz., fourteen 6 dr., sixteen 4 dr., and nine 2 dr. phials of 'Tabloid' and 'Soloid' Brand products, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, with two regular steel needles, twelve tubes of 'Tabloid' Hypodermic products, loops and drawer for instruments, etc.

NO. 223. 'TABLOID' BRAND MEDICINE CASE

In Cowhide. Measurements: 15¼ × 5¼ × 11¼ in. An ideal case for the physician's carriage or motor-car. Contains eight 2 oz. stoppered, twelve 1 oz., fourteen 6 dr., sixteen 4 dr., and nine 2 dr. phials of 'Tabloid' and 'Soloid' Brand products, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, with two regular steel needles, twelve tubes of 'Tabloid' Hypodermic products, a glass-stoppered and capped ether bottle, loops for instruments, and space for bandages and dressings.

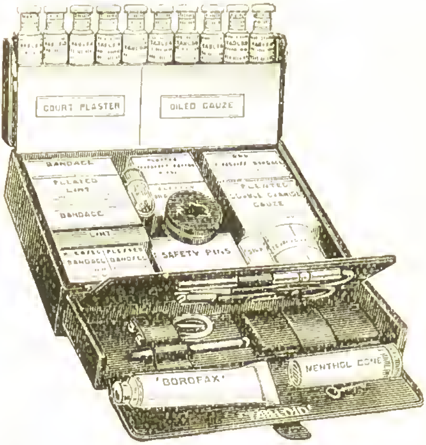
NO. 227. 'TABLOID' BRAND MEDICINE CASE

In Cowhide or Pigskin. Measurements: 6½ × 3¾ × 3¼ in. Made of two metal cups and frames covered with leather. Arranged to contain twenty 1½ dr., twelve 1 dr. and fourteen ½ dr. tubes of 'Tabloid' and 'Soloid' Brand products. Weight, about 2 lb. 6 oz.

No. 229. 'TABLOID' BRAND MEDICINE CASE

This case is conveniently shaped for packing in trunk, kit-bag or suit case. Its rounded corners prevent injury to adjacent articles. Measurements: $8\frac{1}{2} \times 5\frac{1}{4} \times 3\frac{3}{4}$ in. Made of two metal cups and frames covered with Cowhide. Arranged to hold forty 4 dr. phials of 'Tabloid' and 'Soloid' Brand products. Weight, about 4 lb. 15 oz.

No. 230. 'TABLOID' BRAND MEDICINE CASE

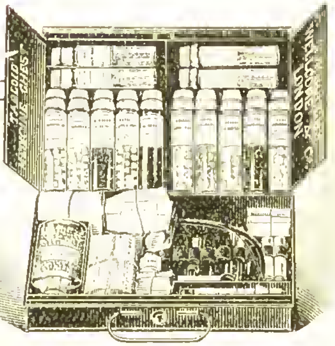


No. 230. 'Tabloid' Brand Medicine Case

A Morocco leather or Cowhide case, which, when closed, measures $8\frac{1}{4} \times 5\frac{7}{8} \times 2\frac{3}{4}$ in. Fitted with ten phials of 'Tabloid' and 'Soloid' Brand products, minor surgical instruments, and emergency dressings. Conveniently shaped for packing in trunk or bag. This case provides a remarkably compact and satisfactory outfit of emergency drugs, instruments and dressings, and will be found of particular utility when the practitioner is working at some distance.

No. 231. 'TABLOID' BRAND MEDICINE CASE

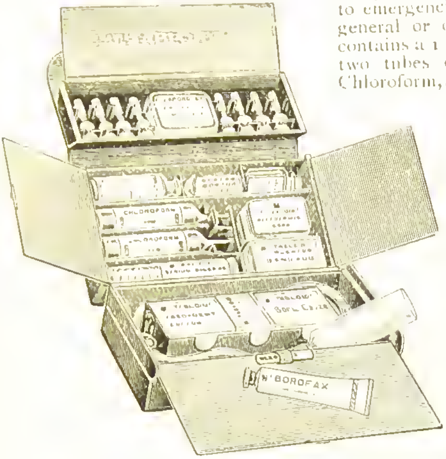
(As suggested by Sir W. Moore)



No. 231. 'Tabloid' Brand Medicine Case

In black japanned metal. Measurements: $11 \times 7\frac{1}{2} \times 3\frac{1}{5}$ in. Contains four $\frac{1}{2}$ oz. phials, fifteen 1 oz. phials, and one 4 oz. bottle; minor surgical instruments and dressings. Complete with 'Tabloid' Brand products, etc., as recommended in Sir W. Moore's *Manual of Family Medicine for India.* Weight, about 6 lb. 14 oz.

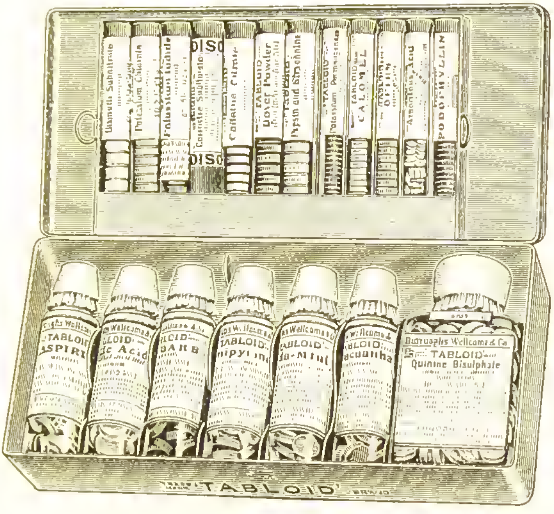
No. 232. 'TABLOID' BRAND MEDICINE CASE
(Physician's Emergency Case)



No. 232. 'Tabloid' Brand Medicine Case
(Physician's Emergency Case)

In Cowhide. Measurements: 8¾ × 6 × 3½ in. The contents of this equipment are chosen with a view to emergencies which may arise in general or obstetric practice. It contains a 1 oz. bottle of 'Ernutin,' two tubes of 'Wellcome' Brand Chloroform, apparatus and materials for intravenous injection, stomach tube, 'Tabloid' Bandages and Dressings, eight 'Vaporole' Hypodermic products, a B. W. & Co. All-Glass Aseptic Hypodermic Syringe with two steel needles, and five tubes of 'Tabloid' Hypodermic products, in nickel-plated hypodermic case with doeskin cover, 'Borofax,' 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Soloid' Corrosive Sublimate, medicine measure, etc. Weight about 5¼ lb.

No. 233. 'TABLOID' BRAND MEDICINE CASE

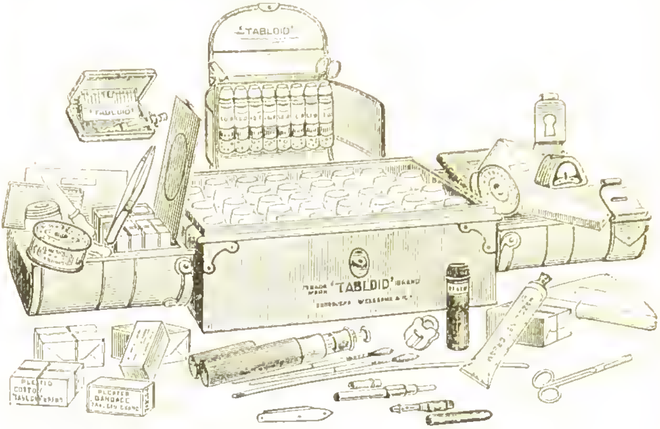


No. 233. 'Tabloid' Brand Medicine Case

In Aluminised Metal. Measurements: 7½ × 3½ × 1¾ in. Contains one 1¾ oz. stoppered bottle, six ½ oz. phials, seven medium-sized tubes and five small tubes of 'Tabloid' and 'Soloid' Brand products.

NO. 250. ‘TABLOID’ BRAND MEDICINE CHEST

(As supplied to the late Sir H. M. STANLEY, EMIN PASHA, Military Expeditions, Missionaries, etc.)

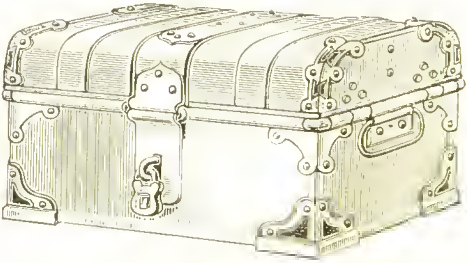


NO. 250. ‘TABLOID’ BRAND MEDICINE CHEST

In japanned sheet-steel. Measurements: 15¾ × 10½ × 8¼ in. Weight, about 40 lb. Contains six 5 oz. and thirty 3½ oz. glass-stoppered bottles of ‘Tabloid,’ ‘Soloid’ and other fine products of B. W. & Co. in movable teak-wood tray. The lid holds supplies of ‘Tabloid’ Bandages and Dressings, minor surgical instruments and other accessories.

NO. 251. ‘TABLOID’ BRAND MEDICINE CHEST

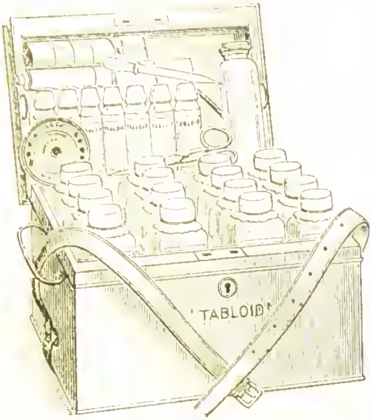
(As supplied to the Jackson-Harmsworth Polar, the National Antarctic, and other expeditions)



NO. 251. ‘TABLOID’ BRAND MEDICINE CHEST

In Aluminium. Measurements: 15 × 10¼ × 8½ in. Weight, about 27 lb. Contains forty 3½ oz. feather-weight bottles of ‘Tabloid,’ ‘Soloid and other fine products of B. W. & Co. In other respects the fitting is the same as No. 250 Chest. The ideal expeditionary chest when lightness and completeness are essential.

NO. 254. 'TABLOID' BRAND MEDICINE CHEST *(The Indian)*



In japanned metal. Measurements: 9 × 6¾ × 6¼ in. Contains sixteen 1¾ oz. glass-stoppered bottles, and seven 4 dr. phials of 'Tabloid' and 'Soloid' Brand products, instruments and tray carrying sundry dressings, etc. Weight, about 12 lb. As carried by the late G. W. Steevens, the war correspondent.

No. 254. 'Tabloid' Brand Medicine Chest *(The Indian)*

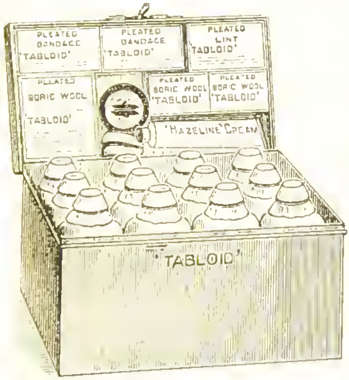
NO. 256. 'TABLOID' BRAND MEDICINE CHEST

(As supplied to the Duke of the Abruzzi's Polar Expedition)

In Aluminium. Measurements: 10¼ × 5¾ × 7⅝ in. Fitted with eighteen 3½ oz. feather-weight bottles and tubes of 'Tabloid' and 'Soloid' Brand products, and a tray containing minor dressings and sundries.

A similar chest is supplied in black japanned metal, and is known as No. 255 Chest. The contents are the same as No. 256 Chest, with the exception that the 'Tabloid' and 'Soloid' Brand products are in glass-stoppered bottles.

NO. 258. 'TABLOID' BRAND MEDICINE CASE *(The Settler's)*


PLEATED BANDAGE 'TABLOID'
PLEATED BANDAGE 'TABLOID'
PLEATED LINT 'TABLOID'
PLEATED BORIC WOOL 'TABLOID'
PLEATED BORIC WOOL 'TABLOID'
PLEATED BORIC WOOL 'TABLOID'
'HAZELINE' CREAM
'TABLOID'

In black japanned metal. Measurements: 8¼ × 4⅜ × 5¾ in. Contains twelve 1½ oz. bottles of 'Tabloid' and 'Soloid' Brand products, 'Hazeline' Cream, 'Tabloid' Bandages and Dressings, adhesive plaster and other accessories. A very compact and useful case, adapted for settlers' or planters' use, and for stations, farms or camps in outlying districts.

No. 258. 'Tabloid' Brand Medicine Case *(The Settler's)*

NO. 260. 'TABLOID' BRAND MEDICINE CASE

(The Safari)

In black japanned metal, with canvas cover and straps. Measurements: 9¾ × 5½ × 7⅞ in. A portable equipment providing in small compass a comprehensive selection of medicaments, dressings, etc. Contains twelve 1¾ oz. and five ½ oz. bottles of 'Tabloid' and 'Soloid' Brand products, 'Tabloid' Bandages and Dressings, minor surgical instruments, a 2 oz. vulcanite wound syringe, a B. W. & Co. All-Metal Hypodermic Syringe, mm. 20, a supply of 'Tabloid' Hypodermic products, 'Borofax' adhesive plaster, etc., etc.

NO. 603. 'TABLOID' BRAND MEDICINE CASE

Measurements: 6⅝ × 3⅛ × 2 in. Fitted with five oval bottles of 'Tabloid' Brand products: Cascara Sagrada, gr. 2; Phenacetin Compound; Potassium Chlorate and Borax; Quinine Bisulphate, gr. 2, and Soda-Mint; also one bottle of 'Soloid' Boric Acid, gr. 6 *(perfumed)*.

In Rex Red, Royal Blue or Brewster Green Enamelled Metal, or in Aluminised Metal.

NO. 700. 'TABLOID' BRAND EMERGENCY BELT

Measurements: 43 × 4¾ in., with buckles and shoulder straps, seven rainproof pouches, fitted as follows: Aluminium case of surgical instruments; aluminium case containing Hypodermic Syringe and 'Tabloid' Hypodermic products; twenty-three feather-weight tubes of 'Tabloid' and 'Soloid' Brand products; emergency dressings, etc.

ANTIDOTE CASE, 'TABLOID' BRAND

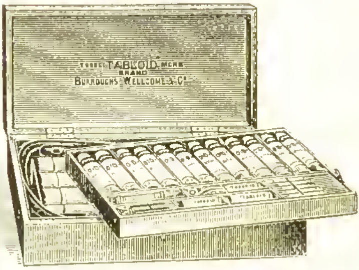
[# B. W. & Co.]

Special Design, the property of Burroughs Wellcome & Co.

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

A compact equipment, containing apparatus and drugs ready for immediate use in the treatment of poisoning.

NO. 300. 'TABLOID' BRAND ANTIDOTE CASE



No. 300. 'TABLOID' BRAND ANTIDOTE CASE

Measurements: 12 × 6½ × 3 in. Fitted with stomach syphon-tube, catheter, a B. W. & Co. Nickel-plated Hypodermic Syringe, two needles. 'Tabloid' Hypodermic products, 'Vaporole' Amyl Nitrite, toxicological chart, eighteen ½ oz. phials and three tubes of 'Tabloid' Brand antidotes, etc., etc. In Polished Mahogany.

ANALYSIS CASES, 'SOLOID' BRAND
[™ B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

The word 'SOLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

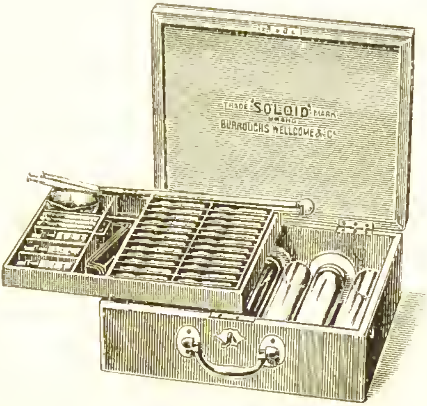
NO. 500. 'SOLOID' BRAND WATER ANALYSIS CASE

This convenient hand-case supplies the apparatus, reagents, etc., necessary for examining samples of drinking-water at the source of supply, and for drawing up the usual reports concerning the suitability of the water for domestic purposes.

Analysis at source

In non-warping, seasoned wood, with mahogany finish. Measurements: 12½ × 10½ × 4½ in. Contains a nickel evaporating dish, Erlenmeyer flask, tripod, spirit-lamp, 100 c.c. and other graduated cylinders, capsules of 'Soloid' Brand Nessler's Solution, 'Soloid' Brand products of Meta-phenylene-diamine Sulphate, Potassium Chromate, Potassium Ferrocyanide, Potassium Permanganate, Silver Nitrate, Soap, Sodium Acid Sulphate, Zinc Dust, etc.

In case of breakage, *the whole or any single piece* of the apparatus may be obtained separately. The supply of 'Soloid' reagents may be renewed.



No. 500. 'SOLOID' BRAND WATER ANALYSIS CASE

NO. 502. 'SOLOID' BRAND WATER AND SEWAGE ANALYSIS CASE

In non-warping, seasoned wood with mahogany finish. Measurements: 18½ × 12½ × 5½ in. Contains a complete equipment specially adapted for examination of water and of sewage effluents. It is fitted with a supply of the necessary reagents and apparatus, including a special distillation outfit for the estimation of ammonia.

Full particulars of these and other examples sent on request

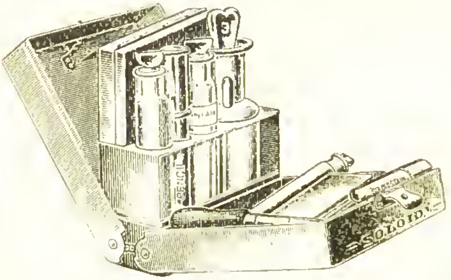
No. 505. 'Soloid' brand Bacteriological Case

This case enables medical men to carry out examinations which formerly were usually submitted to laboratory workers. Owing to its small size and light weight it can readily be carried in the pocket to the patient's bedside, to obtain a blood specimen or a throat swab. Measurements: 5 × 3¼ × 1⅝ in. In nickel-plated metal easily rendered aseptic, with doeskin cover, and containing :—

Three stoppered bottles, containing :—
  Methyl alcohol, dr. 1½
  Absolute alcohol, dr. 1½
  Distilled water, dr. 1½
Rod-stoppered bottle of Canada balsam
Graduated pipette
Cover-glass forceps
Dissecting forceps
Twelve microscopic slides
Spirit-lamp
Glass funnel
Two watch-glasses
Packet of filter papers
Metal case of needles (straight No. 9)
Supply of blood-collecting pipettes
Fifty cover-slips
Glass rod for powdering microscopic stains, etc.
Sterile swab
One tube each of the following 'Soloid' stains :—
  Eosin, Methyl Violet, Fuchsine, Romanowsky Stain, Eosin-Methylene Blue, Methylene Blue, Hæmalum, Toison Blood Fluid.

No. 506. 'Soloid' brand Blood Test Case

Contains 'Soloid' Brand Romanowsky Microscopic Stain (Leishman's Powder), one 20 c.c. drop bottle containing distilled water, two 10 c.c. glass-stoppered and capped phials of methyl alcohol, 1 c.c. pipette, grease crayon, hæmoglobinometer scale, absorbent papers for use with scale, glass rod, camel-hair brush, vaseline, and a vest pocket-case containing six microscopic slides and a Hagedorn needle in carbolised alcohol. The Hagedorn needle and microscopic slides are in a separate box which may, if separately required, be carried in the vest pocket. In nickel-plated metal, with doeskin cover.



No. 506. 'Soloid' Brand Blood Test Case
Measurements 4⅓ × 3½ × 1½ in

No. 510. 'SOLOID' BRAND URINE TEST CASE

The clinical importance of urine analysis is fully recognised. This case provides, in a most compact and convenient form, the requirements for making an examination of urine at the bedside. Owing to their purity and accuracy, the 'Soloid' Brand products contained in this case provide reliable test solutions without any weighing whatever being necessitated.

Urine
analysis
made at
the bedside

In nickel-plated metal, which is easily rendered aseptic. Measurements: 5¼ × 2¾ × 1¼ in. It contains a complete set of materials for making an examination of urine, both qualitative and quantitative, for albumin, sugar, etc. The outfit includes a urinometer, Esbach's albuminimeter, a graduated measure, pipette, test-tubes and stand, test-papers, spirit-lamp, analysis charts, and a good supply of 'Soloid' reagents, including Fehling's Test, Indigo Test, Picric Acid, Potassium Ferrocyanide and Citric Acid. Each portion of the apparatus can also be obtained separately. Complete with doeskin cover.

TRADE MARK 'TABLOID' BRAND FIRST-AID

FOR AUTOMOBILISTS, AVIATORS, AERONAUTS, YACHTSMEN, SPORTSMEN, TRAVELLERS, TOURISTS, ETC.

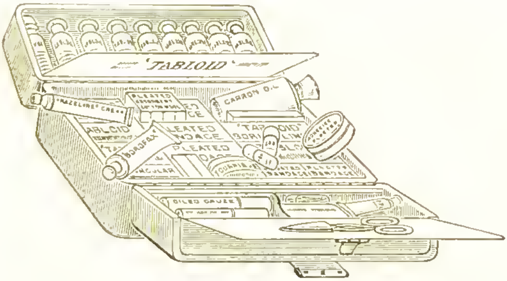
[ᴿᴱᴳᴰ B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co.

These equipments provide compact, complete outfits of emergency medicines, dressings and first-aid accessories. Portable and convenient, they comprise ideal outfits for motorists, cyclists, aviators, aeronauts, yachtsmen and explorers.

No. 702. 'TABLOID' BRAND FIRST-AID

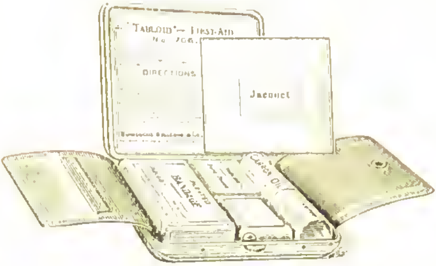


No. 702. 'TABLOID' BRAND FIRST-AID

In Rex Red, Royal Blue or Brewster Green Enamelled Leather. Measurements: 7¼ × 5¼ × 3 in. Contains eight tubes of 'Tabloid' and 'Soloid' Brand products, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' 'Hazeline' Cream, sal volatile, Carron oil (solidified), 'Tabloid' Bandages and Dressings, tourniquet, jaconet, plaster, protective skin, scissors, pins, etc., etc.

No. 706. 'TABLOID' BRAND FIRST-AID

(The Aviator's)

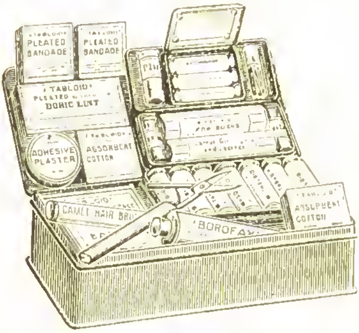


Measurements: 4½ × 3 × ¾ in. Contains 'Tabloid Bandage, Boric gauze, Carron oil (solidified), 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," adhesive plaster, court plaster, jaconet, pins, a card of contents, etc. In Aluminium.

No. 706. 'TABLOID' BRAND FIRST-AID

As carried by M. Louis Paulhan in his aeroplane flight from London to Manchester, April 27-28, 1910.

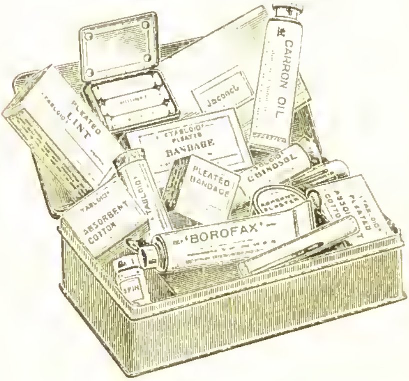
No. 707. 'TABLOID' BRAND FIRST-AID



In Rex Red, Royal Blue or Brewster Green Enamelled Metal, or in Aluminised Metal. Measurements: 6⅝ × 3⅛ × 2 in. Contains seven tubes of 'Tabloid' and 'Soloid' Brand products, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' Carron oil (solidified), jaconet, castor oil, 'Tabloid' Bandages and Dressings, plaster, protective skin, scissors, pins, etc., etc.

No. 707. 'TABLOID' BRAND FIRST-AID

No. 708. 'TABLOID' BRAND FIRST-AID *(The Nurse's)*



In Rex Red, Royal Blue or Brewster Green Enamelled Metal, or in Aluminised Metal. Measurements: 6⅝ × 3⅛ × 2 in. Contains 'Tabloid' Bandages and Dressings, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' Carron oil (solidified), jaconet, plaster, protective skin, pins, etc., and two tubes of 'Tabloid' and 'Soloid' Brand products. With webbing strap for attaching to belt or cycle.

No. 708. 'TABLOID' BRAND FIRST-AID
(The Nurse's)

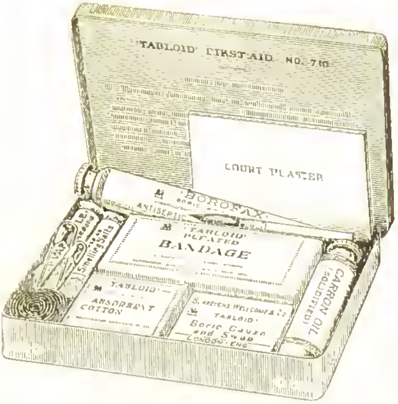
NO. 709. 'TABLOID' BRAND FIRST-AID

(The Boy Scout's)

In Rex Red or Royal Blue Enamelled Metal. Measurements 6¾ × 3½ × 2 in. Contains 'Tabloid' Bandages and Dressings, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' Carron oil (solidified), jaconet, plaster, protective skin, camel-hair brush and pins. With webbing strap for attaching to belt or cycle.

NO. 710. 'TABLOID' BRAND FIRST-AID

Measurements: 4 × 3½ × ¾ in. Contains 'Tabloid' Bandage, 'Tabloid' Dressings, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' Carron oil (solidified), adhesive plaster, court plaster, camel-hair brush and pins. In Scarlet Enamelled Metal.

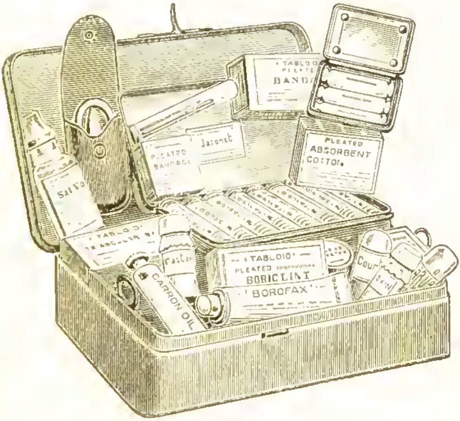

'TABLOID' FIRST-AID NO. 710
COURT PLASTER
BOROFAX
ANTISEPTIC
'TABLOID' PLEATED BANDAGE
Smelling Salts
'TABLOID' ABSORBENT COTTON
BURROUGHS WELLCOME & Co
'TABLOID' Boric Gauze and Swab
LONDON, ENG.
CARRON OIL (SOLIDIFIED)

No. 710. 'TABLOID' BRAND FIRST-AID

NO. 715. 'TABLOID' BRAND FIRST-AID

In Rex Red, Royal Blue or Brewster Green Enamelled Metal, or in Aluminised or Black Japanned Metal.

Measurements: 7⅝ × 4¼ × 2 in. Contains eight tubes of 'Tabloid' and 'Soloid' Brand products, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' sal volatile, Carron oil (solidified), 'Tabloid' Bandages and Dressings, jaconet, plaster, protective skin, scissors, pins, etc.

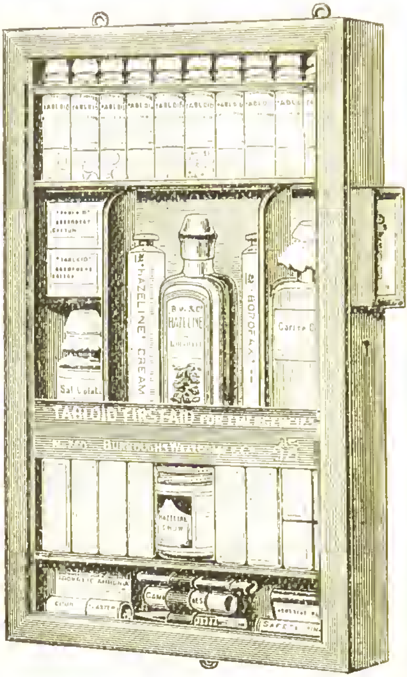


No. 715. 'TABLOID' BRAND FIRST-AID

No. 730. 'TABLOID' BRAND FIRST-AID

(Wall case for Offices, Theatres, Assembly Halls, etc.)

Measurements: 16¾ × 10½ × 2½ in. Contains 'Tabloid' Bandages and Dressings, 'Borofax,' Carron oil, sal volatile, 'Hazeline,' 'Hazeline' Cream, "'Hazeline' Snow," 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," adhesive plaster, court plaster, scissors, dressing forceps, camel-hair brushes, safety-pins, and ten phials of 'Tabloid' and 'Soloid' Brand products.



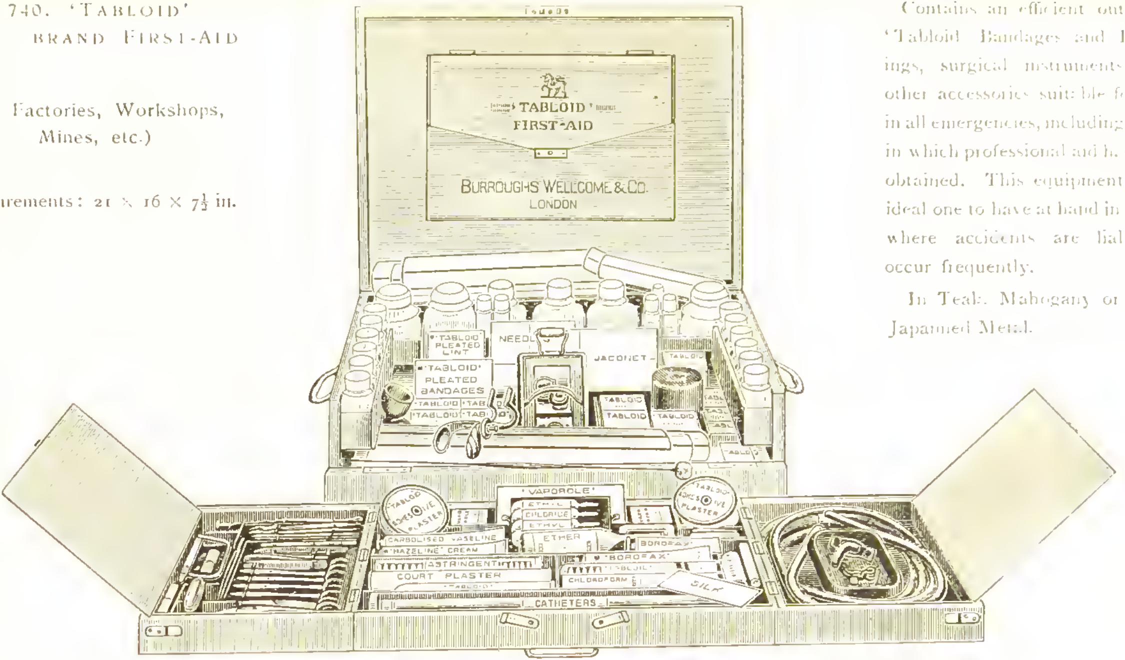
No. 730. 'Tabloid' Brand First-Aid

In Mahogany, with glass front

NO. 740. 'TABLOID' BRAND FIRST-AID

(For Factories, Workshops, Mines, etc.)

Measurements: 21 × 16 × $7\frac{1}{2}$ in.



No. 740. 'TABLOID' BRAND FIRST-AID

Contains an efficient outfit of 'Tabloid' Bandages and Dressings, surgical instruments and other accessories suitable for use in all emergencies, including those in which professional aid has been obtained. This equipment is an ideal one to have at hand in places where accidents are liable to occur frequently.

In Teak, Mahogany or Black Japanned Metal.

TRADE MARK 'TABLOID' BRAND

THYMUS GLAND

Used with notable success in rheumatoid arthriti One report, concerning eighteen bed-ridden patient under treatment with this product, states that, a the end of the recorded observation, eight wer walking without crutch or stick and seven wer gradually regaining the full use of their limbs. I less severe cases similarly gratifying results wer observed.

(See page 261*)*

THE B. W. & CO. ALL-GLASS ASEPTIC HYPODERMIC SYRINGE

The Syringe that injects every drop of the dose Barrel, piston and nozzle are made of glass. Al parts are accurately ground to ensure perfect fi and action. It is more easily cleaned and sterilise than any other syringe.

There are no leather, rubber or other packings t perish and contaminate the solution. There are n screw joints to wear out and become leaky.

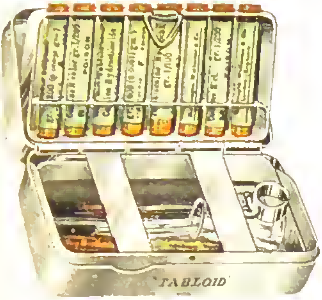
(See page 199*)*

SOME CHARACTERISTIC 'TABLOID' AND 'SOLOID' BRAND CASES

For Ophthalmic, Hypodermic, Dispensing, First Aid, Bacteriological and Analytical use.

On this and the following three pages are presented facsimile reproductions in colour of some characteristic 'Tabloid' and 'Soloid' Equipments. Fuller particulars of these Cases will be found on the pages indicated under the illustrations.

No. 91 ASEPTIC OPHTHALMIC 'TABLOID' BRAND POCKET-CASE (*Registered*)



Fitted with 'Tabloid' and 'Soloid' ophthalmic products, Camel Hair Brushes, Mortar and Pestle, etc.

In Nickel-plated Metal, with Doeskin Cover

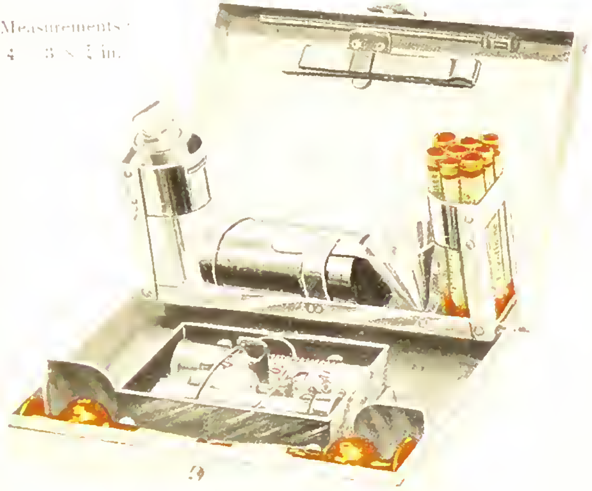
Measurements: 2[illegible] × 1[illegible] × [illegible] in.

No. 91 'Tabloid' Ophthalmic Pocket-Case

For full details, see "Modern Medical Equipments" page 163

No. 15 ASEPTIC HYPODERMIC 'TABLOID' BRAND POCKET-CASE

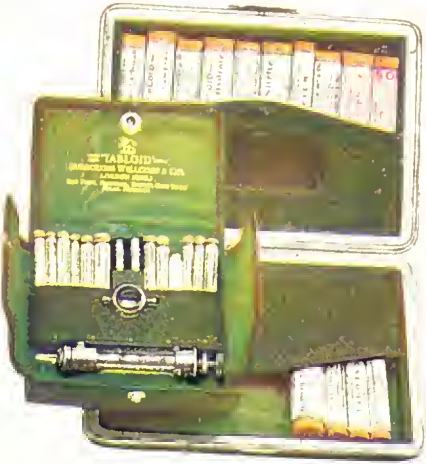
Measurements: 4 × 3 × [illegible] in.



No. 15 Pocket-Case (Polished Metal)

For full details, see "Modern Medical Equipments" page 164

No. 126 'TABLOID' BRAND MEDICINE POCKET CASE



Also supplied in
Cowhide, Morocco
Leather, Pigskin,
Brown or Green Seal
Leather and Brown or
Green Crocodile
Leather

Measurement
5½ × 4 × 1⅛ in.

No. 126 Pocket-Case (Green Seal Leather)

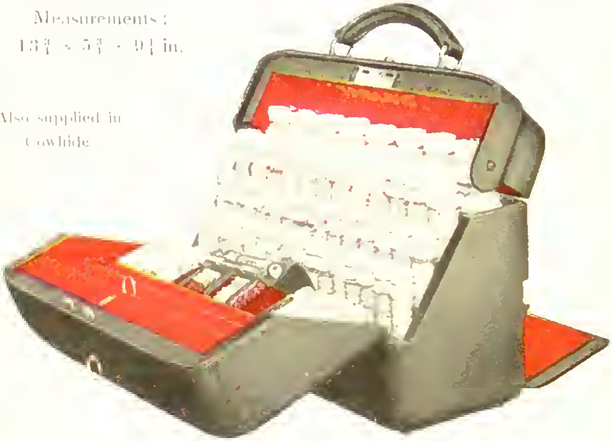
For full details, see "Modern Medical Equipments," page 165

No. 220 'TABLOID' BRAND MEDICINE CASE *(Registered)*

Phials arranged in tiers to display labels. Contains a wide range of 'Tabloid' and 'Soloid' Brand Products, a B. W. & Co. Patent Nickel-plated Hypodermic Syringe, needles, and tubes of 'Tabloid' Hypodermic Products, etc., etc.

Measurements:
13¾ × 5¾ × 9¼ in.

Also supplied in
Cowhide

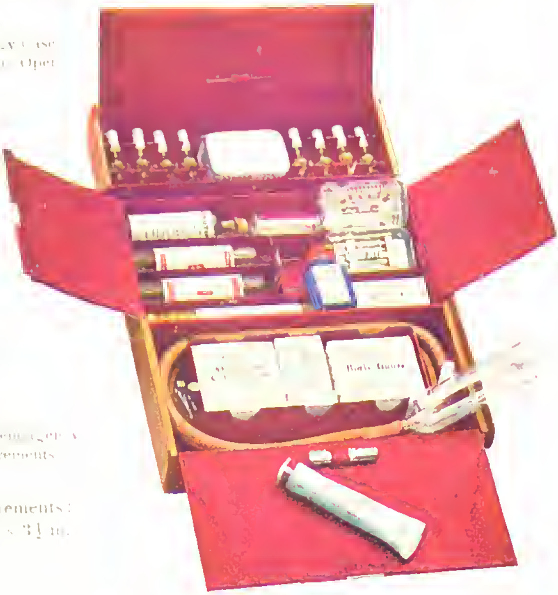


No. 220 Medicine Case (Morocco Leather)

For full details, see "Modern Medical Equipments," page 169

No. 232 'TABLOID' BRAND MEDICINE CASE

(Physician's Emergency Case) *Registered*



No. 232
Emergency Case
(Wholly) Open

Ideal for emergency requirements

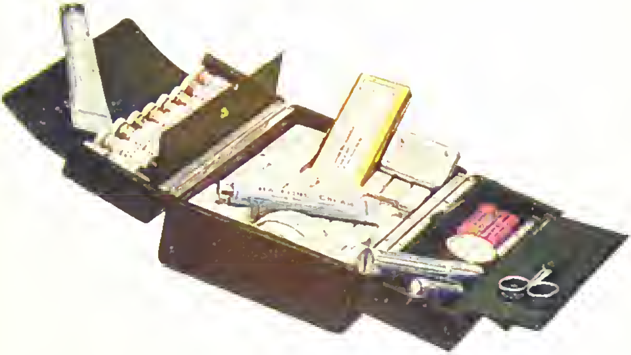
Measurements:
8¾ × 6 × 3½ in.

For full details, see "Modern Medical Equipments," page 171

No. 702 'TABLOID' BRAND FIRST-AID *(Registered)*

Also supplied in Rex Red Enamelled or Royal Blue Leather

Measurements: 7¼ × 5¼ × 3 in.

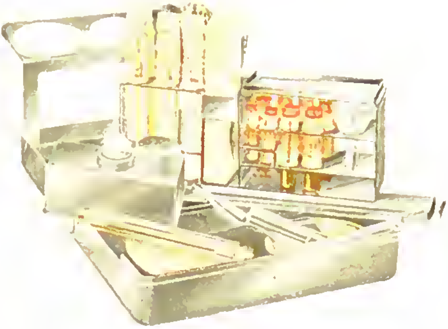


No. 702 'Tabloid' First-Aid (Brewster Green Enamelled Leather) Open

For full details, see "Modern Medical Equipments," page 177

No. 505 'SOLOID' BRAND BACTERIOLOGICAL CASE

(Registered)



Complete with
Doeskin Cover

[illegible]

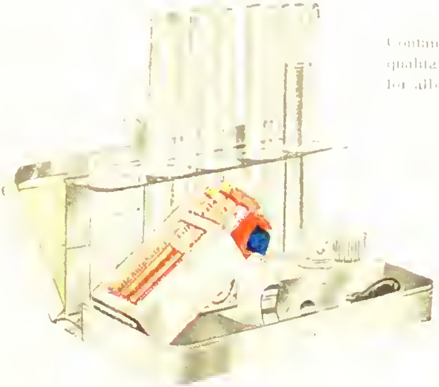
Measurements
5 × 3¼ × 1⅛ in.

No. 505 Case (Nickel-plated Metal)

For full details, see "Modern Medical Equipments," page 176

No. 510 'SOLOID' BRAND URINE TEST CASE

(Registered)



Contains the means of applying qualitative and quantitative tests for albumen, sugar, etc., in urine

Measurements
5¼ × 2¾ × 1¼ in.

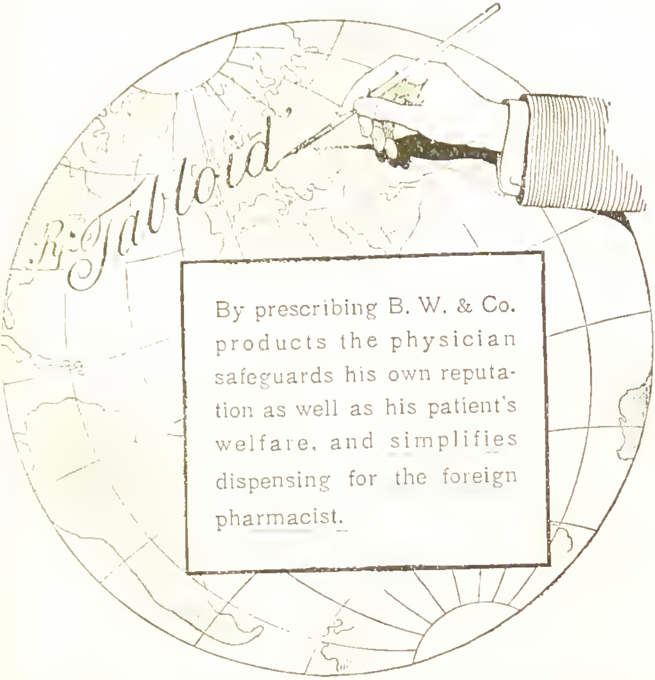
Complete with
Doeskin Cover

No. 510 Case (Nickel-plated Metal)

For full details, see "Modern Medical Equipments," page 177

B.W.&Co. PRODUCTS STANDARDISE DISPENSING ALL OVER THE WORLD

No matter when or where the physician's prescriptions are dispensed, the patient will receive medicaments of the same standard of activity, accuracy and dosage, so long as the products of Burroughs Wellcome & Co. are specified.



By prescribing B. W. & Co. products the physician safeguards his own reputation as well as his patient's welfare, and simplifies dispensing for the foreign pharmacist.

B. W. & Co. have Offices and Warehouses in every Continent, and Depots in every civilised community. Their products are stocked by, or are within the reach of, every Pharmacist.

DANGEROUS ABBREVIATION

The words 'Tabloid' and 'Soloid' should always be written in full to ensure the supply of genuine—B. W. & Co.—products.

When ordering a certain product an abbreviation may bring you what you do not want, and thereby cause serious disappointment.

To write any contraction of 'Tabloid' or 'Soloid,' when these brands are intended, introduces an element of doubt. Why take the risk ?

Behind the brands 'Tabloid' and 'Soloid' are years of research, experience and endeavour—the whole foundation of Burroughs Wellcome & Co.'s reputation.

When 'Tabloid'— — — or 'Soloid' — — — is written, in whatever part of the world the prescription is dispensed, the patient will receive the same genuine products of uniform strength and unvarying activity compounded with exceptional accuracy from ingredients of the highest standard of purity.

It is best and safest, therefore, to write the word in full, thus—

℞ 'Tabloid' — — —

FORMULARY
OF
FINE PRODUCTS
ISSUED BY
BURROUGHS WELLCOME
& CO.

'Alaxa' Aromatic Liqueur of Cascara Sagrada (*Trade Mark*)

	DOSE
An aromatic liqueur which presents the tonic, laxative properties of cascara sagrada in a pleasant and acceptable condition.	One-half to two teaspoonfuls.

In bottles of 4 fluid ounces.

Alkaloids, 'Wellcome' Brand *(see pages* 273-290*)*

Ammonium Chloride Inhaler, 'Vaporole' Brand *(see page* 271*)*

Anæsthetics, Local *(see* 'Epicaine,' *page* 198; 'Tabloid' Hypodermic products, *pages* 201-206; 'Soloid' products, *page* 222; *and* 'Vaporole' products, *pages* 270-271*)*

Analysis Cases, 'Soloid' Brand *(see pages* 175-177*)*

Analysis Charts, packets of 25

Antidote Case, 'Tabloid' Brand *(see page* 174*)*

'Aol,' (*Trade Mark*) a derivative of *Santalum album* *(see* 'Tabloid' Brand products, *page* 232*)*

Arylarsonates *(see* 'Soamin,' *pages* 222 *and* 258*)*

Bacteriological Case, 'Soloid' Brand *(see page* 176*)*

Bandages, Pleated Compressed, 'Tabloid' Brand *(see pages 192, 193)*

'Bivo' Beef and Iron Wine
(Trade Mark)

	DOSE.
A pure detannated wine, each fluid ounce contains the stimulating properties of fresh lean beef, with the equivalent of one grain of metallic iron. In bottles of 8 and 16 fluid ounces.	One teaspoonful for children, to one tablespoonful for adults.

'Borofax' BRAND BORIC ACID OINTMENT
(Trade Mark)

An emollient, possessing antiseptic and sedative properties.

'Brockedon' Products

Burroughs Wellcome & Co. are the successors to, and sole proprietors of, the business of BROCKEDON, who, in 1842, ORIGINATED COMPRESSED MEDICINES in the shape of bi-convex discs—issued under the designation of COMPRESSED PILLS.

'Brockedon' Brand Compressed Pure Bicarbonate of Soda
,, ,, ,, ,, ,, ,, Potass
,, ,, ,, ,, Chlorate ,, ,,

Chemicals, 'Wellcome' Brand *(see pages 273-292)*

CHESTS AND CASES (B. W. & Co.)

A comprehensive selection of chests and cases is prepared and issued under the 'TABLOID' and 'SOLOID' Brands, fitted with medicines suited for every variety of climate, and varying in size and content, from the fully-equipped chests containing supplies sufficient for medical officers of expeditions, etc., down to the compact pocket-cases suited to the needs of the private practitioner.

Descriptions and illustrations of many of these cases will be found in the preceding section.

Chloroform, 'Wellcome' Brand *(see page 277)*

Compound Menthol Snuff (B. W. & Co.) *(see page 209)*

TRADE MARK 'DARTRING' BRAND PRODUCTS

The 'DARTRING' Brand appears on all labels of the genuine original Lanoline preparations.

'DARTRING' BRAND—

.. 'Lanesine' *(see page 208)*
,, Lanoline (Adeps Lanæ Hydros.)
.. .. Anhydrous (Adeps Lanæ)
Adeps Lanæ Hydros., B.J.D.
,, ,, Anhydros., B.J.D.

NOTE.—If this quality of Adeps Lanæ Hydros. or of Adeps Lanæ Anhydros. be required, the letters B.J.D. must be specified.

.. .. Cold Cream
,, ,, Ointment Base
,, ,, ,, ,, Anhydrous
,, ,, Pomade
,, ,, Soaps—Shaving *(in sticks)*
,, ,, ,, Ichthyol, Pine Tar, Toilet (boxes of 3 tablets)
,, ,, Toilet *(specimen boxes)*
,, ,, ,, *(collapsible tubes)*
,, ,, Toilet Powder (tin boxes)
,, ,, Veterinary

Dental Hypodermic Syringe, The B. W. & Co. *(see page 200)*

Dentifrice, 'Opa' Liquid *(see page 210)*

Diary, The 'Wellcome' Photographic Exposure Record and *(see page 217)*

DRESSINGS, SURGICAL

TRADE MARK 'TABLOID' BRAND

Pleated Compressed Dressings were originated and introduced by Burroughs Wellcome & Co.

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

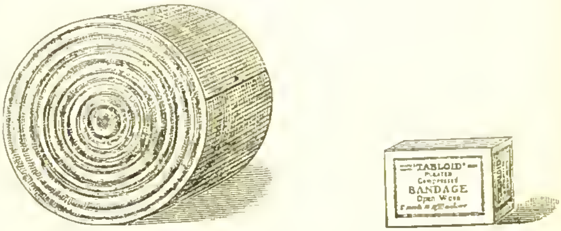
Important advance

The introduction of 'Tabloid' Pleated Compressed Bandages and Dressings marks an important advance in the preparation of surgical accessories. These bandages and dressings are made of materials of the finest quality, and are subjected to great pressure under

Dressings, Surgical, 'Tabloid' Brand—*continued*

which each assumes a rectangular shape. After compression, each is automatically wrapped in an effective protective covering.

The superiority of 'Tabloid' Dressings over the ordinary variety is very marked, not only in convenience and compactness, but also in quality of materials. Notwithstanding the great saving in space effected by means of compression, 'Tabloid' Dressings are yet as easily unfolded as those in ordinary use. Other advantages are their freedom from contamination, and extreme compactness which enables them easily to be carried in the hand-bag, saddle- or cycle-case.



Graphic representation of the relative bulk of an ordinary bandage $2\frac{1}{2}$ in. × 6 yds., and a 'Tabloid' bandage of the same length and width

The above illustration, representing an ordinary and a pleated bandage, graphically demonstrates the striking difference in their relative size, and renders apparent the consequent economy in space effected by the use of 'Tabloid' Pleated Compressed Bandages and Dressings, while their flattened sides enable them, even bulk for bulk, to be packed still more closely and compactly than the old-fashioned rounded roller-bandage in common use.

'Tabloid' Surgical Dressings are also issued *sterilised* in special impervious coverings. By means of these *sterilised* pleated bandages and dressings the latest requirements of modern surgical practice are adequately and conveniently provided for. They are remarkable for their exceptional evenness of medication.

The following are issued in packages as follow :—

Absorbent Cotton between Gauze, Pleated Compressed, 'Tabloid' Brand—

In 2 ounce packets

Dressings, Surgical, 'Tabloid' Brand—*continued*

Adjustable Head Dressing, Compressed, 'Tabloid' Brand—

'Tabloid' Adjustable Head Dressing (*originated* and *introduced* by B. W. & Co.), is an ingenious device, which makes the troublesome roller-bandage a thing of the past, for use in head injuries. It consists essentially of a cap-like arrangement, split on one side, with the lower edge prolonged into a bandage which fixes the cap. It fits any head; can be applied in a few seconds; does not slip; and it adds to the patient's comfort and appearance. For emergency, field or first-aid work, its superiority is overwhelming.

Bandages, Pleated Compressed, 'Tabloid' Brand—

Open Wove,	1 in. × 6 yds.
,, ,,	2½ in. × 6 yds.
Flannel,	2½ in. × 5 yds.

Triangular (Pictorial), packets of 2 bandages

Carbolised Tow, Pleated Compressed, 'Tabloid' Brand—

In 2 ounce packets

Cotton, Pleated Compressed, 'Tabloid' Brand—

Absorbent,	¼ ounce, in packets of 4 (*not supplied sterilised*)
,,	1 and 2 ounce packets
Boric.	1 and 2 ,, ,,
Double Cyanide, 3°/₀,	1 and 2 ,, ,,
Iodoform,	1 and 2 ,, ,,

Gauzes, 'Tabloid' Brand—

Absorbent,	in packets of	3 yds.	(compressed)
Bismuth,	in cartons of 6,	½ in. × 1 yd.,	*sterilised only*
,,	,, ,,	1 in. × 1 yd.	,,
,,	,, ,,	2 in. × 1 yd.	,,
,,	,, ,,	3 in. × 1 yd.	,,
,,	in packets of	1 in. × 6 yds.	(compressed)
,,	,, ,,	2 in. × 6 yds.	,,
,,	,, ,,	3 in. × 6 yds.	,,
,,	,, ,,	1 in. × 12 yds.	,,
,,	,, ,,	2 in. × 12 yds.	,,
,,	,, ,,	3 in. × 12 yds.	,,
,,	,, ,,	36 in. × 3 yds.	,,
,,	,, ,,	36 in. × 3 yds.,	*sterilised*

Dressings, Surgical, 'Tabloid' Brand *continued*

Gauzes, 'Tabloid' Brand—*continued*

Boric,	in packets of		3 yds.	(compressed)
Double Cyanide, 3%	,,	..	3 yds.	..
Iodoform,	..	,,	1 yd.	..
,,	,,	..	3 yds.	..
,,	,,	..	1 in. × 6 yds.	..
Sal Alembroth, 1%	,,	..	3 yds.	..

Lint, Pleated Compressed, 'Tabloid' Brand—

Plain,	1 and 2	ounce	packets
Boric,	1 and 2	,,	,,
Carbolised,	1	,,	,,

Ear Drums, Artificial (Dr. Ward Cousins' Design)—

For use in cases of deafness caused by collapse or perforation of the tympanic membrane. Supplied in four sizes. A combined probe and forceps for insertion or extraction of the drum is also supplied.

Effervescent Medicinal Substances, 'Tabloid' Brand—

In the preparation of 'Tabloid' Effervescent products, only ingredients of exceptional purity are employed, and special methods are adopted to retain their effervescent properties. On account of their relatively small surface the 'Tabloid' products are much less liable to deterioration than the ordinary granular preparations. Mixed with water they promptly render draughts of a refreshingly effervescent nature and accurate posology. (*See* 'Tabloid' Brand Effervescent Products, *page* 241)

TRADE MARK 'ELIXOID' BRAND PRODUCTS

The word 'ELIXOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'ELIXOID' Brand Products are elegant and acceptable fluid preparations of important medicaments to which agreeable flavours have been imparted without in any degree diminishing their physiological activity.

'ELIXOID' BRAND—

,, **Ammonium Valerianate,** in bottles of 8 fluid ounces.

Each fluid drachm contains Ammonium Valerianate, gr. 2.

'Elixoid' Brand Products—*continued*

'ELIXOID' BRAND—

,, **Formates Compound,** in bottles of 4 fluid ounces.

Each fluid ounce contains Calcium Formate, gr. 12; Sodium Formate, gr. 6; Magnesium Formate, gr. 6.

,, **Glycerophosphates,** in bottles of 4 fluid ounces.

Each fluid ounce contains Calcium Glycerophosphate, gr. 4; Sodium Glycerophosphate, gr. 2; Potassium Glycerophosphate, gr. 2; and Magnesium Glycerophosphate, gr. 1.

,, **Mucin,** in bottles of 4 fluid ounces.

Each fluid drachm contains, in suspension, Mucin, gr. 2½.

,, **Pine Tar Compound,** in bottles of 4 fluid ounces.

A pleasantly-flavoured preparation containing Tar, 'Pinol,' Terpin Hydrate, Wild Black Cherry, Tolu and Ipecacuanha in a convenient and acceptable form.

Also various other products issued under the 'Elixoid' Brand

Emetine Hydrobromide, 'Wellcome' Brand

A stable salt of Emetine for therapeutic use *(see page 278)*

Emetine Hydrochloride, 'Wellcome' Brand

A soluble salt of Emetine *(see page 279)*

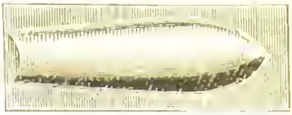
TRADE MARK 'ENULE' BRAND RECTAL SUPPOSITORIES

The word 'ENULE' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

The 'ENULE' Rectal Suppository possesses conspicuous advantages over those of the ordinary conical shape, which are difficult to introduce, and may even be expelled. 'Enule' suppositories are encased in sheaths of pure tinfoil, easily stripped off at the moment of using. They contain accurate doses of pure drugs, the active principles of which are evenly diffused throughout the mass, and they retain the full activity of the medicament for long periods of time.

'Enule' Brand Rectal Suppositories *continued*

'Enule' Brand Rectal [illegible]
after removal of sheath



'Enule' Brand Rectal [illegible]
showing sheath [illegible]

This shape originated by [illegible]

PROF. CASPARI, in his *Treatise on Pharmacy*, says:—

"The usual shape of rectal suppositories is that of a cone with a rounded apex, but the difficulty of readily introducing them into the rectum has led to the designing of a new shape by H. S. Wellcome, of London, the great advantages of which become apparent when it is remembered that the bulbous end is inserted into the rectum, and, that as soon as the greatest diameter has been passed, expulsion of the suppository is impossible, by reason of the very contractile force of the sphincter muscle, which renders retention of the ordinary conical shape often so difficult."

Expert opinion

Each kind is packed in containers of one dozen (of one strength).

'ENULE' BRAND— No.				DIRECTION
,, 10.	Belladonna Extract	gr. 1/4	...	As required
,, 11.	,, ,,	gr. 1/2	...	As required
,, 12.	,, ,,	gr. 1	...	As required
,, 9.	Bismuth Subgallate	gr. 10	...	As required
,, 14.	Cocaine Hydrochloride	gr. 1/2	...	As required
,, 30.	'Epinine' *(Trade Mark)*	0·01 gm. [gr. 1/6]	...	As required
,, 25.	Gall and Opium ... ... Containing Extract of Opium, gr. 1/4, and Tannic Acid, gr. 3, equivalent to gr. 5 of Galls.		...	As required
,, 1.	Glycerin (Anhydrous), 95%	Children's size		As required
,, 2.	Glycerin (Anhydrous), 95%	Adults' size	...	As required
,, 5.	'Hazeline' Compound... *(Trade Mark)* Containing 'Hazeline,' Extract of Hamamelis and Zinc Oxide *(see also* 'Hazeline' Suppositories*)*	...	...	As required
,, 19.	Lead and Opium ... ... ℞ Plumbi Acetatis ... ... gr. 3 Pulv. Opii ... ... gr. 1		...	As required

B.P. OR BETTER

'Enule' Brand Rectal Suppositories—*continued*

'ENULE' BRAND—

	No.			DIRECTION
..	3.	Meat, Predigested	Children's size	As required
..	4.	.. ..	Adults' size	
		Containing gr. 8⅓ and gr. 15, respectively, of concentrated peptone from choice fresh beef.		
..	6.	Milk, Predigested	Children's size	As required
..	7.	.. ..	Adults' size	
		Containing gr. 10 and gr. 18, respectively, of concentrated peptone from new milk.		
..	10.	Morphine Hydrochloride	gr. 1/4 ...	As required
..	17.	,, ,,	gr. 1/2 ...	As required
..	18.	,, ,,	gr. 1 ...	As required
..	15.	Morphine and Belladonna ...	...	As required
		℞ Morphinæ Hydrochloridi ... gr. 1/4 Ext. Belladonnæ ... ... gr. 1/2		
..	20.	Opium Extract ...	gr. 1 ...	As required
..	13.	Quassin, Amorphous The bitter principle of quassia wood, used in treatment for threadworms, especially in children.	gr. 1/2 ...	One on each of at least 12 successive nights
..	8.	Quinine Bisulphate ...	gr. 5 ...	As required
..	21.	Santonin	gr. 3 ...	As required
..	23.	Soap Compound ...	... ...	As required
		℞ Saponis Animalis ... ... gr. 7 Sodii Sulphatis Exsiccati ... gr. 7		

Also other preparations issued under the 'Enule' Brand

'Enule' Brand Rectal Suppositories must be stored in a cool and dry place.

TRADE MARK 'EPININE' PRODUCTS

'Epinine' (3 : 4 - dihydroxyphenylethylmethylamine), is a synthetic hæmostatic, discovered by investigations in the laboratories of the 'Wellcome' Chemical Works, London (Eng.). It possesses the characteristic sympatho-mimetic actions of supra-renal extract. Compared with adrenine, its pressor activity in the cat was found to be as 1 : 10, while the rise of blood-pressure produced by 'Epinine' persists longer than that produced by a dose of adrenine which raises the pressure to an equal maximum. In all other respects, the action of 'Epinine' is similar to that of the natural supra-renal active principle.

'Epinine' Products—*continued*

The uses of 'Epinine' correspond in every respect with those of the natural extract—principally hæmostatic and styptic.

Being a synthetic preparation, forming crystalline salts, the chemical purity of 'Epinine' can be guaranteed, and its solutions may be sterilised in a hard glass or suitable metal vessel without undergoing decomposition.

'Epinine,' 1 in 100, in amber-coloured stoppered bottles containing 10 c.c. and 25 c.c.

A supply of 'Soloid' Sodium Chloride, 0·25 gm., for preparing normal saline solution, is included with each bottle.

'Epicaine' *(Trade Mark)* ('Epinine' and Cocaine Hydrochloride), presents special advantages as a styptic local anæsthetic.

In amber-coloured stoppered bottles containing 10 c.c.

Each c.c. contains 'Epinine,' 0·0003 gm. (gr. 1/216), and Cocaine Hydrochloride, 0·02 gm. (gr. 1/3); each min. 10 contains 'Epinine,' gr. 1/365, and Cocaine Hydrochloride, gr. 2/11.

(See also 'Enule' 'Epinine,' *page* 196; 'Tabloid' Ophthalmic 'Epinine,' *page* 211; 'Tabloid' 'Epinine' Compound, *page* 242; 'Vaporole' 'Epicaine' and 'Vaporole' 'Epinine,' *page* 271*)*

Ergotinine, 'Wellcome' Brand *(see page 279)*

Ergotoxine Phosphate, 'Wellcome' Brand *(see page 279)*

TRADE MARK 'ERNUTIN' BRAND PRODUCTS

The word 'ERNUTIN' is a brand which designates fine products issued by Burroughs Wellcome & Co.

The characteristic effects of ergot on the uterus and blood-pressure are due to certain active principles, which have been isolated at the Wellcome Physiological Research Laboratories. Many ergot preparations contain little or none of these principles, and give negative or even harmful results.

'ERNUTIN' products present the active therapeutic principles of ergot—Ergotoxine, 'Tyramine' and 'Ergamine'—in stable solution and in a state of purity. Being prepared from active

'Ernutin' Brand Products *continued*

principles, the purity of which can be determined by chemical means, the necessity for physiological standardisation is removed.

'Ernutin' (Oral). In 1, 4 and 16 fl. oz. amber-coloured bottles. DOSE 30 to 60 minims

'Ernutin' (for Hypodermic use) (*see* 'Vaporole' 'Ernutin,' *page* 271)

For full particulars of the pharmacology and therapeutics of 'Ernutin' products, see special booklet.

Ether, in hermetically-sealed glass capsules, each containing min. 60.

'Eucalyptia,' pure oil of *Eucalyptus globulus*—
(*Trade Mark*) Respiratory disinfectant and deodorant.
Bottles of 2 fl. oz.

First-Aid, 'Tabloid' Brand (*see pages* 177-181)

Gauzes, 'Tabloid' Brand (*see pages* 193-194)

Gonococcus Vaccine, 'Wellcome' Brand (*see page* 268)

Glycerin 'Enule' Suppositories (*see page* 196)

TRADE MARK 'HAZELINE' PRODUCTS

PREPARATION		DOSE
'Hazeline' Brand *Hamamelis virginiana*, in 4 and 16 fl. oz. bottles.	An anodyne and styptic fluid obtained by distillation from the fresh young twigs.	dr. 1 to dr. 3
'Hazeline' Cream, in collapsible tubes and glass pots.	Combines anodyne, astringent and emollient properties.	—
"'Hazeline' Snow," (*Trade Mark*) in glass pots.	A non-greasy preparation, owing its astringent, soothing and healing properties to the presence of a high percentage of 'Hazeline.'	—
'Hazeline' Suppositories, in boxes of 12	Contain pure 'Hazeline'	One as required

(*See also* 'Enule' 'Hazeline' Compound, *page* 196)

Also other preparations issued under the 'Hazeline' Brand

HYPODERMIC APPARATUS

SYRINGE

All-Glass Aseptic Hypodermic Syringe, The B. W. & Co.

Barrel, piston and nozzle consist entirely of glass. The solid piston obviates any necessity for packing. May be instantly taken apart and sterilised. In five sizes min. 15, min. 20, or 1 c.c., with two regular steel needles, or min. 40 or min. 60, with two intramuscular steel needles. A Detachable Finger-Grip (nickel-plated), entirely distinct from the working parts of the syringe, can be supplied. A 'Tabloid' Brand Detachable Sheath-Grip is also issued for use with this syringe.

(If desired, platino-iridium needles can be fitted)

Nickel-plated Metal Cases, with removable rack, for the B. W. & Co. All-Glass Aseptic Hypodermic Syringes.

Patent Hypodermic Syringe, The B. W. & Co.

Nickel-plated. With two regular steel needles and finger-grip. Capacity, min. 15 or min. 20.

(If desired, platino-iridium needles can be fitted)

Patent Hypodermic Syringe, The B. W. & Co.

Solid Silver. Nozzle detachable, so that the solution of a 'Tabloid' Hypodermic product may be effected in the barrel. With two platino-iridium needles. in case. Capacity, min. 20.

Dental Hypodermic Syringe, The B. W. & Co.

Made of solid metal throughout: therefore durable, able to withstand severe strain, and easily rendered aseptic. Min. 30, with adjustable finger-grip, three needle-attachments and three steel mountless needles; complete in nickel-plated metal case with doeskin cover.

Serum Syringe, The B. W. & Co. All-Glass Aseptic

The working parts are composed entirely of glass, the needle being attached to the nozzle by a flexible rubber joint which guards against fracture. In five sizes, 2 c.c., 3 c.c., 5 c.c., 10 c.c. or 25 c.c., with two steel needles, in metal case.

(If desired, platino-iridium needles can be fitted)

Hypodermic Apparatus *continued*

SYRINGES *continued*

Serum Syringe, The B. W. & Co. Nickel-plated

In nickel-plated metal case, complete, with two special platino-iridium needles, capacity 5 c.c. or 10 c.c.

Tuberculin Syringe, The B. W. & Co. All-Glass Aseptic

1 c.c., complete, with two regular steel needles.

Needles for B. W. & Co. Syringes

(Full list, etc., sent on request)

HYPODERMIC PRODUCTS

TRADE MARK 'TABLOID' BRAND

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

"They are quite free from objectionable and irritative salts." —*British Medical Journal.*

"They are very soluble and not at all irritating."—*Lancet.*

'Tabloid' Hypodermic products accurately contain the stated weight of pure medicament. They are rapidly soluble, of uniform activity, and they keep perfectly.

PREPARATION	STRENGTH	DOSE
'TABLOID' BRAND (Hypodermic)—		
No.		
,, 36. Aconitine Nitrate ...	gr. 1/640	One
,, 71. *Anæsthetic Compound, A		As required
℞ Cocainæ Hydrochloridi...	gr. 1/10	
Morphinæ Hydrochloridi	gr. 1/50	
Sodii Chloridi	gr. 9/10	
,, 70. *Anæsthetic Compound, B		As required
℞ Cocainæ Hydrochloridi...	gr. 1/5	
Morphinæ Hydrochloridi	gr. 1/50	
Sodii Chloridi	gr. 9/10	
,, 80. *Anæsthetic Compound, C		As required
℞ Eucainæ Lactatis ...	gr. 7/16	
Sodii Chloridi	gr. 3-15/16	
,, 87. Apomorphine Hydrochloride	gr. 1/20	gr. 1/20 to gr. 1/10
,, 51. ,, ,,	gr. 1/15	
,, 19. ,, ,,	gr. 1/10	

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* *In tubes of* 12. *Others contain* 20

Hypodermic Products, 'Tabloid' Brand *continued*

	PREPARATION	STRENGTH	DOSE
	'TABLOID' BRAND (Hypodermic)—		
No.			
,, 93.	* Apomorphine Hydrochloride Strychnine Hydrochloride	gr. 1/10 gr. 1/60	One
,, 15.	Atropine Sulphate ...	gr. 1/150	gr. 1/200 to gr. 1/100 (increased)
,, 14.	,, ,, ...	gr. 1/100	
,, 13.	,, ,, ...	gr. 1/60	
,,	Atropine and Morphine (*see* Morphine, *page* 204)		
,, 121.	Atropine Sulphate ... Strychnine Sulphate ...	gr. 1/200 gr. 1/100	One
,, 122.	Atropine Sulphate ... Strychnine Sulphate ...	gr. 1/150 gr. 1/80	One
,, 43.	*Caffeine Sodio-salicylate	gr. 1/2	gr. 1/2 to gr. 4
,, 23.	Cocaine Hydrochloride ...	gr. 1/10	gr. 1/10 to gr. 1/2
,, 22.	,, ,, ...	gr. 1/6	
,, 54.	* ,, ,, ...	gr. 1/4	
,, 40.	* ,, ,, ...	gr. 1/2	
	Cocaine Compounds (*see* Anæsthetic Compounds A and B, *page* 201)		
,, 44.	Codeine Phosphate ...	gr. 1/4	gr. 1/4 to gr. 2
,, 77.	*Cotarnine Hydrochloride	gr. 1/4	gr. 1/4 to gr. 1/2
,, 46.	Curara	gr. 1/12	gr. 1/12 to gr. 1/2
,, 30.	Digitalin (Amorphous) ...	gr. 1/100	gr. 1/100 to gr. 1/30
,, 306.	Digitalin (Crystalline),	0·0005 gm. [gr. 1/130]	One
,, 86.	Digitalin (Amorphous) Strychnine Sulphate āā	gr. 1/100	One
,, 125.	Digitalin (Amorphous) Strychnine Sulphate Trinitrin (Nitroglycerin) āā	gr. 1/100	One
,, 130.	*Emetine Hydrochloride	gr. 1/3	One
,, 362.	*'Ergamine' (*Trade Mark*), (β-iminazolylethylamine)	0·001 gm. [gr. 1/65]	One

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* *In tubes of* 12. *Others contain* 20

Hypodermic Products, 'Tabloid' Brand—*continued*

	No.	PREPARATION	STRENGTH	DOSE
		'TABLOID' BRAND (Hypodermic)		
..	38.	Ergotinine Citrate	gr. 1/200	gr. 1/200 to gr. 1/50
..	37.	,, ,,	gr. 1/100	
,,	92.	*Ergotinine Citrate Morphine Sulphate	gr. 1/100 gr. 1/6	One
,,	81.	*Ergotinine Citrate .. Strychnine Sulphate . .	gr. 1/100 gr. 1/20	One
,,	116.	*Ergotoxine	gr. 1/100	One to two
..	119.	*Ergotoxine ... ... Morphine Sulphate ...	gr. 1/100 gr. 1/6	One
..	120.	*Ergotoxine ... ... Strychnine Sulphate ...	gr. 1/100 gr. 1/20	One
		Eserine (*see* Physostigmine)		
,,	79.	*Eucaine Hydrochloride	gr. 1/3	gr. 1/10 to gr. 1/2
..	78.	* ,, ,,	gr. 1	
,,	112.	*Eucaine Lactate... ...	gr. 1/3	gr. 1/10 to gr. 1/2
,,	113.	* ,, ,, ...	gr. 1	
,,	102.	Heroin Hydrochloride ...	gr. 1/25	gr. 1/25 to gr. 1/6
,,	101.	,, ,, ...	gr. 1/12	
..	127.	,, ,, ...	gr. 1/6	
,,	47.	Homatropine Hydrochlor.	gr. 1/250	gr. 1/250 to gr. 1/20
..	49.	Hyoscine Hydrobromide	gr. 1/200	gr. 1/200 to gr. 1/100 (increased)
,,	100.	,, ,,	gr. 1/100	
,,	48.	* ,, ,,	gr. 1/75	
,,	95.	*Hyoscine Compound, A	...	One
		℞ Hyoscinæ Hydrobromidi ... ... Morphinæ Sulphatis ... ... Atropinæ Sulphatis	gr. 1/100 gr. 1/6 gr. 1/180	
,,	96.	*Hyoscine Compound, B	...	One
		℞ Hyoscinæ Hydrobromidi ... ... Morphinæ Sulphatis ... ... Atropinæ Sulphatis	gr. 1/100 gr. 1/4 gr. 1/150	
..	31.	*Hyoscyamine Sulphate	gr. 1/80	gr. 1/200 to gr. 1/100 (increased)
,,	41.	* ,, ,,	gr. 1/20	
,,	29.	Mercuric Chloride ...	gr. 1/60	gr. 1/60 to gr. 1/30
,,	28.	,, ,, ...	gr. 1/30	
,,	124.	Mercuric Succinimide ...	gr. 1/10	gr. 1/10 to gr. 1/5
,,	98.	,, ,, ...	gr. 1/5	

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* *In tubes of* 12. *Others contain* 20

Hypodermic Products, 'Tabloid' Brand—*continued*

PREPARATION		STRENGTH	DOSE
'TABLOID' BRAND **(Hypodermic)**			
No.			
,, 66.	Morphine Hydrochloride	gr. 1/6	gr. 1/8 to gr. 1/4 (increased)
,, 55.	,, ,,	gr. 1/4	
,, 90.	,, ,,	gr. 1/3	
,, 91. *	,, ,,	gr. 1/2	
,, 132.	Morphine Hypophosphite,	gr. 1/4	One
,, 133.	,, ,,	gr. 1/3	
,, 134. *	,, ,,	gr. 1/2	
,, 135. *	,, ,,	gr. 1	
,, 27.	Morphine Meconate ...	gr. 1/8	gr. 1/8 to gr. 1/4 (increased)
,, 26.	,, ,, ...	gr. 1/6	
,, 25.	,, ,, ...	gr. 1/4	
,, 24.	,, ,, ...	gr. 1/3	
,, 6.	Morphine Sulphate ...	gr. 1/12	gr. 1/8 to gr. 1/4 (increased)
,, 5.	,, ,, ...	gr. 1/8	
,, 4.	,, ,, ...	gr. 1/6	
,, 3.	,, ,, ...	gr. 1/4	
,, 2.	,, ,, ...	gr. 1/3	
,, 1. *	,, ,, ...	gr. 1/2	
,, 76. *	,, ,, ...	gr. 1	
,, 88.	Morphine Tartrate ...	gr. 1/4	One
,, 74. *	Morphine Hydrochloride Atropine Sulphate ...	gr. 1/6 gr. 1/70	One
,, 12.	Morphine Sulphate ... Atropine Sulphate ...	gr. 1/12 gr. 1/250	One of requisite composition
,, 11.	Morphine Sulphate ... Atropine Sulphate ...	gr. 1/8 gr. 1/200	
,, 10.	Morphine Sulphate ... Atropine Sulphate ...	gr. 1/6 gr. 1/180	
,, 9.	Morphine Sulphate ... Atropine Sulphate ...	gr. 1/4 gr. 1/150	
,, 8.	Morphine Sulphate ... Atropine Sulphate ...	gr. 1/3 gr. 1/120	
,, 85.	Morphine Sulphate ... Atropine Sulphate ...	gr. 1/3 gr. 1/60	
,, 7. *	Morphine Sulphate ... Atropine Sulphate ...	gr. 1/2 gr. 1/100	
,, 89.	Morphine Sulphate ... Strychnine Sulphate ...	gr. 1/4 gr. 1/60	One

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* *In tubes of* 12. *Others in tubes of* 20

Hypodermic Products, 'Tabloid' Brand—*continued*

PREPARATION		STRENGTH	DOSE
'TABLOID' BRAND (Hypodermic)			
No.			
„ 355.	†New Tuberculin (W), Human, containing tubercle bacillary substance	0·00001 mgm.	One
„ 356.	†New Tuberculin (W), Human, containing tubercle bacillary substance	0·0001 mgm.	One
„ 357.	†New Tuberculin (W), Human, containing tubercle bacillary substance	0·001 mgm.	One
„ 358.	†New Tuberculin (W), Bovine, containing tubercle bacillary substance	0·00001 mgm.	One
„ 359.	†New Tuberculin (W), Bovine, containing tubercle bacillary substance	0·0001 mgm.	One
„ 360.	†New Tuberculin (W), Bovine, containing tubercle bacillary substance	0·001 mgm.	One
	Nitroglycerin (*see* Trinitrin)		
„ 39.	Physostigmine Salicylate	gr. 1/100	One to four
„ 84.	Picrotoxin	gr. 1/60	One to two
„ 338.	Pilocarpine Hydrochlor.	0·001 gm.	One or more
„ 34.	Pilocarpine Nitrate ...	gr. 1/10	gr. 1/20 to gr. 1/2
„ 64.	„ „ ...	gr. 1/6	
„ 33.	* „ „ ...	gr. 1/3	
„ 32.	* „ „ ...	gr. 1/2	
„ 82.	*Potassium Permanganate	gr. 2	gr. 1 to gr. 5
„ 83.	*Quinine Bihydrochloride	gr. 1	gr. 1 to gr. 5
„ 73.	* „ „ ...	gr. 3	
„ 97.	* „ „ ...	gr. 5	
„ 103.	*Quinine Bisulphate ...	gr. 5	gr. 1 to gr. 5
„ 42.	*Quinine Hydrobromide...	gr. 1/2	gr. 1/2 to gr. 2
„ 56.	*Sparteine Sulphate ...	gr. 1/2	gr. 1/2 to gr. 1
„ 52.	Strophanthin	gr. 1/500	One to five

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* *In tubes of* 12; † *in tubes of* 6. *Others in tubes of* 20

Hypodermic Products, 'Tabloid' Brand *continued*

PREPARATION		STRENGTH	DOSE
'TABLOID' BRAND **(Hypodermic)** No.			
,, 109.	Strychnine Hydrochloride	gr. 1/200	gr. 1/150 to gr. 1/10
,, 110.	,, ,, ...	gr. 1/100	
,, 111.	,, ,, ...	gr. 1/30	
,, 62.	Strychnine Nitrate ...	gr. 1/15	gr. 1/150 to gr. 1/10
,, 61.	,, ,, ...	gr. 1/10	
,, 18.	Strychnine Sulphate ...	gr. 1/150	gr. 1/150 to gr. 1/10
,, 17.	,, ,, ...	gr. 1/100	
,, 16.	,, ,, ...	gr. 1/60	
,, 104.	,, ,, ...	gr. 1/50	
,, 99.	,, ,, ...	gr. 1/40	
,, 75.	,, ,, ...	gr. 1/30	
,, 123.	,, ,, ...	gr. 1/20	
,, 126.	Strychnine Sulphate ... Trinitrin (Nitroglycerin)	gr. 1/50 gr. 1/100	One to two
,, 65.	Trinitrin (Nitroglycerin)	gr. 1/250	gr. 1/250 to gr. 1/50
,, 115.	,, (,,)	gr. 1/100	
,,	Tuberculin, New (W) (*see* New Tuberculin)		
,, 361.	*'Tyramine' *(Trade Mark)* (Para-hydroxyphenyl-ethylamine)	0·02 gm. [gr. 1/3]	One

Also various other Hypodermic products issued under the 'Tabloid' Brand.

**In tubes of* 12. *Others in tubes of* 20

Hypodermic Solutions *(see* 'Vaporole' Brand Products, *pages* 270-271*)*

Hypodermic Veterinary Products, 'Tabloid' Brand

(Full particulars sent on request)

Indicators for Volumetric Analysis *(see page* 229*)*

Inhaler

Ammonium Chloride Inhaler, 'Vaporole' Brand

A remarkably compact apparatus which will deliver perfectly neutral vapour of pure Ammonium Chloride.

'Vaporole' Acid } For use in above Inhaler.
'Vaporole' Alkali } In boxes of 12.

A Nasal Attachment is also supplied for use with above Inhaler.

Iodic - Hydrarg. *(see* Mercuric Potassium Iodide, 'Soloid' products, *page* 225, and 'Tabloid' products, *page* 251*)*

TRADE MARK 'KEPLER' MALT EXTRACT AND COMBINATIONS

SPECIAL CAUTION.—Many attempts are made to imitate 'Kepler' Malt Products, hence, as malt preparations vary greatly in dietetic value, it is necessary to take precautions against substitution. Verbal instructions are not safe. To prevent fraud it is best to write prescriptions for original bottles.

DOSE—Of all 'Kepler' preparations, one teaspoonful to two dessertspoonfuls.

PREPARATION AND STRENGTH

'KEPLER' MALT EXTRACT

A most reliable and highly-concentrated extract, prepared from the finest winter-malted barley. Its dietetic value depends not only on its high diastatic powers, but also on the albuminoids, phosphates, etc., which it contains.

Ditto with BEEF AND IRON

Each fluid drachm contains: Extract of Beef, gr. 1; and Iron and Ammonium Citrate, gr. 1/8

Ditto with CASCARA SAGRADA

Each fluid ounce contains Extract of Cascara Sagrada, gr. 6

Ditto with CHEMICAL FOOD *(Phosphates Compound)*

Each fluid ounce contains: Iron Phosphate, gr. 2; Calcium Phosphate, gr. 3; Sodium Phosphate, gr. 1/4; Potassium Phosphate, gr. 1/4

Ditto with HÆMOGLOBIN

Each fluid ounce contains Hæmoglobin, gr. 8-3/4

Ditto with HYPOPHOSPHITES

Each fluid ounce contains: Calcium Hypophosphite, gr. 8; Potassium Hypophosphite, gr. 4; Sodium Hypophosphite, gr. 4

Ditto with IRON

Each fluid ounce contains Soluble Iron Pyrophosphate, gr. 4

Ditto with IRON AND QUININE CITRATE

Each fluid ounce contains Iron and Quinine Citrate, gr. 7-1/2

Ditto with IRON IODIDE

Each fluid ounce contains Iron Iodide, gr. 2

Ditto with IRON, QUININE AND STRYCHNINE

Each fluid ounce contains: Iron Phosphate, gr. 1/2; Quinine Phosphate, gr. 3/8; and Strychnine Phosphate, gr. 1/64

Ditto with PEPSIN

Each fluid ounce contains pure Pepsin, gr. 4

Ditto with PEPSIN AND PANCREATIN

Each fluid ounce contains pure Pepsin and pure Pancreatin, of each gr. 4

Ditto with PHOSPHORUS

Each fluid ounce contains pure Phosphorus, gr. 1/64

'Kepler' Malt Extract and Combinations *continued*

PREPARATION AND STRENGTH

'KEPLER' COD LIVER OIL WITH MALT EXTRACT

Among known fatty food-stuffs in nature the highest in nutritive value is also the most readily assimilated, and that most easily utilised by the tissues. It is, moreover, a tissue-builder; and it repairs waste, and fortifies resistance against disease.

The drawbacks of cod liver oil in a natural state have always been the nausea, unpleasant eructations and alimentary disturbances it produces even when given in the purest form. 'Kepler' Cod Liver Oil with Malt Extract is especially designed to overcome these difficulties in administration. In this form it presents the purest Cod Liver Oil intimately incorporated in a state of minute molecular subdivision with the finest extract of winter-malted barley.

Thoroughly diffused in 'Kepler' Malt Extract, its digestion is easy and assimilation certain, while its unique palatability makes it readily acceptable to the most delicate children and fastidious patients, and even in the most debilitated of subjects its administration is followed by a rapid increase in weight and strength.

Initial doses should be small and only gradually increased.

Ditto and CHEMICAL FOOD *(Phosphates Compound)*

Each fluid ounce contains: Iron Phosphate, gr. 2; Calcium Phosphate, gr. 3; Sodium Phosphate, gr. 1/4; Potassium Phosphate, gr. 1/4

Ditto and HYPOPHOSPHITES

Each fluid ounce contains: Calcium Hypophosphite, gr. 4; Potassium Hypophosphite, gr. 2; Sodium Hypophosphite, gr. 2

Ditto and IRON IODIDE

Each fluid ounce contains Iron Iodide, gr. 2

Ditto and PHOSPHORUS

Each fluid ounce contains pure Phosphorus, gr. 1/64

Also various other products issued under the 'Kepler' Brand

'Lanesine,' 'Dartring' Brand

In collapsible tubes.

Lanoline (*see* 'Dartring' Products, *page* 191)

Lint, Pleated Compressed, 'Tabloid' Brand *(see page* 194*)*

Mallein, 'Wellcome' Brand, for diagnosis of Glanders In hermetically-sealed phials containing 1 c.c. *(sufficient for one injection).*

Malt Extract *(see* 'KEPLER,' *pages* 207-208*)*

Medicine Chests and Cases, 'Tabloid' Brand *(see pages* 159-181*)*

Menthol Snuff, Compound (B. W. & Co.)

An extremely effective and convenient combination of menthol, ammonium chloride, camphor, 'Epinine,' bismuth oxychloride, lycopodium, etc., issued in enamelled tins, after the manner of old-fashioned black-and-gold snuff-boxes.

Methyl Alcohol (Pure)

For use in microscopic staining. In hermetically-sealed glass phials, each containing 15 c.c. (approx. ½ fl. oz.)

Microscopic Stains, 'Soloid' Brand *(see pages* 229-230*)*

Mineral Waters *(see* 'Tabloid' Brand Mineral Water Salts, *page* 251*)*

Morphine Salts (Acetate, Hydrochloride, Sulphate and Tartrate, *see* 'Wellcome' Brand, *page* 285)

Mucin *(in scales)*—

A compound substance consisting of protein and a carbohydrate, given internally in those conditions in which bismuth is usually prescribed. Bottles containing 1 oz.

(See also 'Elixoid' Mucin, *page* 195; 'Soloid' Mucin and Menthol Comp., *page* 226; *and* 'Tabloid' Mucin Compound, *page* 252*)*

Nasal Attachment for 'Vaporole' Ammonium Chloride Inhaler *(see page* 271*)*

Nasal Medicaments, 'Soloid' Brand *(see page* 226*)*

Needles, for Hypodermic Dental and Serum Syringes. *(Full list on application)*

Nessler's Solution, Glass Capsules of *(see* 'Soloid' Brand Products, *page* 229*)*

New Tuberculin (W), 'Wellcome' Brand *(see page* 265*)*

'Nizin' *(Trade Mark)*—

A zinc salt of sulphanilic acid. An antiseptic which is readily soluble in water, and which, in the strengths recommended for use, is non-irritating and non-toxic. Bottles containing 1 oz., 4 oz. and 16 oz.

Normal Horse Serum, 'Wellcome' Brand *(see page 221)*

Nozzles, Vulcanite, for Collapsible Tubes *(see page 272)*

'Opa' LIQUID DENTIFRICE, Aromatic, antiseptic, refreshing. *(Trade Mark)* Bottles of 2 fl. oz. and 4 fl. oz. (with sprinklers).

Ophthalmic and Hypodermic Pocket-Case, 'Tabloid' Brand *(see page 163)*

Ophthalmic Pocket-Cases, 'Tabloid' Brand *(see page 163)*

OPHTHALMIC PRODUCTS

TRADE MARK 'TABLOID' BRAND

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'TABLOID' Ophthalmic products are minute in size, as thin as notepaper, and contain exact doses of pure drugs, prepared with a perfectly innocuous and rapidly soluble basis.

PREPARATION			STRENGTH
'TABLOID' BRAND **(Ophthalmic)**—			
,,	T	Alum	gr. 1/250
,,	EE	Argyrol	gr. 1/24
,,	X	Atropine Sulphate	gr. 1/600
,,	A	,, ,,	gr. 1/200
,,	B	Atropine Hydrobromide Cocaine Hydrochloride	āā gr. 1/200
,,	AA	Cocaine Hydrochloride	gr. 1/50
,,	C *	,, ,,	gr. 1/20

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* *In tubes of* 12. *Others contain* 25

B.P. OR BEYTER

Ophthalmic Products, 'Tabloid' Brand *continued*

		PREPARATION	STRENGTH
		'TABLOID' BRAND (**Ophthalmic**)—	
,,	BB	Dionin	0·0005 gm. [gr. 1/130]
,,	FF	* ,,	0·005 gm. [gr. 1/13]
,,	OO	Duboisine Sulphate ...	0·00025 gm. [gr. 1/260]
,,	AC	'Epinine' (*Trade Mark*) (3:4-Dihydroxyphenylethylmethylamine)	0·006 gm. [approx. gr. 1/11]
,,		Eserine (*see* Physostigmine)	
,,	Y	*Euphthalmine Hydrochloride	gr. 1/40
,,	Z	*Fluorescein	gr. 1/250
,,	H	Homatropine Hydrochloride	gr. 1/400
,,	E	* ,, ,,	gr. 1/40
,,	O *	Homatropine Hydrochloride	gr. 1/240
		Cocaine Hydrochloride ...	gr. 1/24
,,	W *	Homatropine Hydrochloride Cocaine Hydrochloride āā	gr. 1/50
,,	U	Hyoscine Hydrobromide	gr. 1/600
,,	AD	Physostigmine Salicylate	gr. 1/4000
,,	GG	,, ,, ...	gr. 1/2000
,,	F	,, ,, ...	gr. 1/600
,,	G *	Physostigmine Salicylate	gr. 1/500
		Tropacocaine Hydrochloride	gr. 1/100
,,	AE	Pilocarpine Nitrate ...	gr. 1/3000
,,	K	,, ,, ...	gr. 1/400
,,	M	Pilocarpine Nitrate ...	gr. 1/500
		Cocaine Hydrochloride ...	gr. 1/200
,,		Scopolamine (*see* Hyoscine)	
,,	L	*Tropacocaine Hydrochloride	gr. 1/30
,,	XX	Tuberculin	0·0002 gm. [gr. 1/324]
		A supply of 'Tabloid' Ophthalmic Control is included with each tube of 'Tabloid' Ophthalmic Tuberculin.	
,,	R	Zinc Sulphate	gr. 1/250
,,	DD *	Zinc Sulphate	gr. 1/250
		Cocaine Hydrochloride ...	gr. 1/20

Also various other Ophthalmic products issued under the 'Tabloid' Brand.

---

* *In tubes of* 12. *Others in tubes of* 25

OPHTHALMIC PRODUCTS

'SOLOID' BRAND

The word 'SOLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'SOLOID' BRAND

(Ophthalmic)

,, 1 Corrosive Sublimate *(Hydrarg. Perchlor.)*
gr. 1/1000, tubes of 25

For other 'Soloid' Brand products suitable for Ophthalmic use, see pages 222-228.

Ophthalmic Veterinary Products, 'Soloid' Brand

(Full particulars sent on request)

'Paroleine'—A perfectly stable, odourless, colourless and *(Trade Mark)* tasteless oil. It is a useful solvent and vehicle for many of the remedies employed in treating diseases of the nose and throat. Bottles containing 4 fl. oz. and 1 lb. (18½ fl. oz.).

PASTILLES, TRADE MARK 'TABLOID' BRAND

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'TABLOID' Pastilles provide an agreeable vehicle for the gradual and prolonged application of medicaments to the mouth and throat, and in some cases may be used to secure the general effects of a drug. By their use, astringents, antiseptics, anæsthetics, expectorants and laxatives can be conveniently exhibited. The basis of the pastille is demulcent, increasing the efficiency of the active ingredients.

'TABLOID' BRAND—

No.

,, 1. Ammonium Chloride and Liquorice
Each contains Ammonium Chloride, gr. 1

,, 22. Benzoic Acid Compound without Cocaine

℞	Acidi Benzoici	gr. 1/2
	Codeinæ...	gr. 1/10
	Menthol	gr. 1/10
	Pulv. Ipecacuanhæ . ..	gr. 1/10
	Gummi Rubri	gr. 1/2
	Ol. Menthæ Piperitæ ...	*q.s.*

Pastilles, 'Tabloid' Brand—*continued*

'TABLOID' BRAND—

No.

,, 4. Codeine, gr. 1/8

,, 5. Glycerin

,, 6. Glycerin and Black Currant

,, 7. Glycerin, Tannin and Black Currant

,, 8. Glycerin, Tannin, Capsicum and Black Currant

Each contains Tannin, gr. 1/2, and the equivalent of Tincture of Capsicum, B.P., min. 3/4, equal to Capsicum, gr. 3/80.

,, 18. **Laxative Fruit**

Each contains Extract of Senna Fruit, gr. 5, pleasantly flavoured. This 'Tabloid' Pastille is extremely palatable, and facilitates the administration, to children and fastidious patients, of an efficient laxative.

,, 10. Lemon Juice

,, 11. Linseed, Liquorice and Chlorodyne

Each contains Morphine Hydrochloride, gr. 1/120

,, 16. Menthol, gr. 1/8

,, 17. Menthol and Eucalyptus

℞ Menthol ... ... gr. 1/20
Ol. Eucalypti ... . min. 1/2

,, 12. Morphine and Ipecacuanha

℞ Morphinæ Hydrochloridi ... gr. 1/36
Pulv. Ipecacuanhæ ... ... gr. 1/12

,, 20. **Pectoral**

Containing Liquorice, Squill, Tolu, Senega, Ipecacuanha, Wild Black Cherry, etc.

,, 19. Pine Tar Compound

Containing Pine Tar, Terebene, Benzoin, Tolu, Ipecacuanha, etc.

,, 13. 'Pinol,' min. 1

Also various other Pastilles issued under the 'Tabloid' Brand

Phenacetin, 'Tabloid' Brand *(see page 253)*

'Phenofax' BRAND CARBOLIC ACID OINTMENT

(Trade Mark)

'PHENOFAX' is an antiseptic sedative dressing which presents 4 per cent. of pure phenol in a bland basis, and is notable for its sedative effect on the skin and mucous surfaces. It disinfects, allays pain, and encourages granulation.

PHOTOGRAPHIC CHEMICALS

'TABLOID' BRAND

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

Pure and reliable

'TABLOID' Photographic Chemicals represent the acme of convenience and reliability, while their superior quality and accuracy in weight and composition ensure the best results. They entirely obviate the trouble of weighing small quantities of chemicals, are superior in point of solubility to ordinary crystalline and other preparations, and prevent the disappointments occasioned by the deterioration of stock solutions. Their extreme compactness enables the tourist, traveller, or explorer to carry everywhere with him the materials for developing, fixing, etc., without materially increasing his *impedimenta*. 'Tabloid' Brand products have been proved by leading explorers, press photographers and overseas experts to resist the most trying atmospheric and climatic conditions. At home they save time, trouble and space.

Developers

The developers are packed in cartons, each containing the 'Tabloid' Reducing Agent, and the 'Tabloid' Accelerator specially prepared for use with that reducing agent.

'TABLOID' BRAND
(Photographic)—
,, Amidol
,, Edinol
,, Eikonogen
,, Glycin
,, Hydroquinone (Quinol)
,, Pyro-Metol *(Imperial Standard Formula)*
,, *Pyro-Soda *(Ilford Formula)*
,, **'Rytol'** *(Trade Mark)* Universal Developer

'TABLOID' BRAND
(Photographic)—
,, Metol
,, Metol-Quinol
,, Ortol
,, Paramidophenol
,, Pyro

* In ordering this special developer, it is always necessary to quote "Ilford Formula."

Intensifiers

'TABLOID' BRAND
(Photographic)—
,, Chromium Intensifier
,, Mercuric Iodide and Sodium Sulphite

B.P. OR BETTER

Photographic Chemicals, 'Tabloid' Brand—*continued*

Toners

'TABLOID' BRAND
(Photographic)

,, Gold Chloride, gr. ½, with Borax, gr. 15 (B 1)
,, ,, ,, ,, Sodium Bicarbonate, gr. 15 (B 2)
,, ,, ,, ,, Sodium Phosphate, gr. 15 (B 3)
,, ,, ,, ,, Sodium Tungstate, gr. 15 (B 4)
,, ,, ,, ,, Sodium Formate Compound (B 5)
,, ,, ,, ,, Sulphocyanide Compound (B 6)
,, ,, ,, ,, Thiosulphate Compound *(Combined Bath for toning and fixing P.O.P.)* (B 10)

The above are supplied in cartons containing sufficient for the preparation of six toning baths of 5 to 10 ounces or more. For convenience they may be ordered by their numbers, thus: 'Tabloid' Gold Toning, B 1, B 2, etc.

'TABLOID' BRAND
(Photographic)—

,, Bleaching Compound
,, Blue Toner *(for Bromide Prints, Gaslight Prints and Lantern Slides)*
,, Copper Ferrocyanide Toning Compound *(for Bromide Prints and Lantern Slides)*
,, Green Toner *(for Bromide Prints, Gaslight Prints and Lantern Slides)*
,, Platinum Toning Compound *(for Matt P.O.P.)*
,, Sepia Toner *(for Bromide Prints and Lantern Slides)*
,, Sulphiding Compound

Accessories

'TABLOID' BRAND
(Photographic)— STRENGTH

,, *Alkali*—
'Tabloid' Sodium Carbonate ... gr. 44
,, *Density Reducers*—
'Tabloid' Ammonium Persulphate ... gr. 11
'Tabloid' Potassium Ferricyanide ... gr. 2

Photographic Chemicals, 'Tabloid' Brand—*continued*

Accessories—*continued*

'TABLOID' BRAND

(Photographic)—

	STRENGTH
,, *Fixer—*	
'Tabloid' Sodium Thiosulphate (Hypo), Dried, gr. 28·5	Equals gr. 44 of crystals
,, *Hardener—*	
'Tabloid' Alum	gr. 10
,, *Hardener and Clearer—*	
'Tabloid' Alum and Citric Acid Compound Chrome Alum, gr. 5; Citric Acid, gr. 5	
,, *Preservatives—*	
'Tabloid' Potassium Metabisulphite ...	gr. 10
'Tabloid' Sodium Sulphite, Dried, gr. 5	Equals gr. 10 of crystals
,, *Restrainers—*	
'Tabloid' Ammonium Bromide ...	gr. 1
'Tabloid' Potassium Bromide	gr. 1
'Tabloid' Sodium Citrate	gr. 1
,, *Sensitiser (for carbon tissue, etc.)—*	
'Tabloid' Potassium Ammonium Chromate	gr. 24

For Direct Colour Photography

(with Autochrome, Dufay, Omnicolore and other Colour Plates)

'TABLOID' BRAND

(Photographic)—

,, Reversing Compound

,, Colour Plate Intensifier

(In development, 'Tabloid' 'Rytol' Universal Developer is used. *see page* 214)

Also various other Photographic products issued under the 'Tabloid' Brand.

For Photographic Staining

'SOLOID' BRAND

(Photographic)—

,, Photographic Stains (Blue, Green, Red, Salmon or Yellow), tubes of 6

B.P. OR BETTER

PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, THE 'WELLCOME'

The most useful pocket-book for the photographer. Contains ruled pages for recording exposures, a diary for the year, also numerous technical articles and tables, and an exposure calculator which by ONE turn of ONE scale tells the correct exposure under any circumstance, etc., etc.

NORTHERN HEMISPHERE AND TROPICAL EDITION, for all countries (other than the United States of America), between the Arctic Circle and the Tropic of Capricorn (about 20° S.). Bound in light green canvas.

SOUTHERN HEMISPHERE AND TROPICAL EDITION, for all countries south of the Tropic of Cancer (about 20° N.). Bound in dark green canvas.

THE EDITION FOR THE UNITED STATES OF AMERICA.

Each Edition complete with wallet for proofs, etc., and pencil.

PHOTOGRAPHIC OUTFIT, No. 905

TRADE MARK 'TABLOID' BRAND

A complete, compact chemical outfit for developing and fixing plates, films, bromide or gaslight papers, and for toning and fixing P.O.P.

STANDARD CONTENTS :—

'Tabloid' 'Rytol' Universal Developer, to make 88 ounces of solution ; 'Tabloid' Sodium Thiosulphate (Hypo) ; 'Tabloid' Chromium Intensifier, to make 50 ounces of solution ; 'Tabloid' Gold Chloride with Thiosulphate Compound (Combined Bath), to make 30 ounces of solution ; 'Tabloid' Sepia Toner.

(Contents may be varied as desired)

Measurements : $4 \times 4 \times 2\frac{1}{8}$ in. In rex red, royal blue, imperial green or bright scarlet enamelled metal.

(When ordering, please specify colours required)

Pilocarpine Hydrochloride, 'Wellcome' Brand

Free from *iso*-pilocarpine and the inactive pilocarpidine *(see also page* 286*)*.

'Pinol' (Distilled Essence of *Pinus pumilio*)
(Trade Mark)

A valuable stimulant, disinfectant and antiseptic in respiratory affections. The 'Tabloid' Pastille *(see page* 213) affords a pleasant means of securing prolonged continuous local action.

In ½ fl. oz. and 1 fl. oz. bottles.

Pneumococcus Vaccine, 'Wellcome' Brand *(see page* 268*)*

Pocket-Cases, Hypodermic, Ophthalmic, etc., 'Tabloid' Brand *(see pages* 159 166*)*

Rheumatic Fever Vaccine, 'Wellcome' Brand *(see page* 269*)*

Saccharin, 'Tabloid' Brand *(see page* 258*)*
(See also 'Tabloid' 'Saxin,' *page* 258*)*

Saddle-Cases, 'Tabloid' Brand *(see page* 166*)*

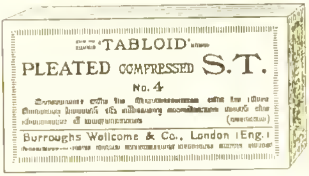
Saline Solutions for Intravenous Injection *(see page* 227*)*

Salol, 'Tabloid' Brand *(see page* 258*)*

SANITARY TOWELS, PLEATED COMPRESSED, TRADE MARK 'TABLOID' BRAND

Pleated Compressed Sanitary Towels were originated and introduced by Burroughs Wellcome & Co.

'TABLOID' Pleated Compressed Sanitary Towels possess several points of superiority over ordinary sanitary towels. They are made of materials of exceptional quality specially adapted for the purpose. Their highly absorbent properties are particularly noteworthy. The delicate texture of the surface of these towels ensures perfect freedom from the slightest sense of discomfort in use. Owing to the extremely small space which they occupy, they are particularly convenient when travelling. Extreme compactness is secured by compression, and perfect cleanliness ensured by the method of packing.



'Tabloid' Pleated Compressed Sanitary Towel (No. 4)
Half size

Four sizes are issued, each size in cartons of 12

'Saxin' (*see* 'Tabloid' 'Saxin,' *page* 258)
(Trade Mark)

SERA, TRADE MARK 'WELLCOME' BRAND

The word 'WELLCOME' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

Reputation

The high reputation which these sera have deservedly obtained with the medical profession is constantly confirmed by the favourable reports received, and the accumulating evidence proves this high reputation to be maintained.

Tests

'Wellcome' Brand Sera are prepared in the Wellcome Physiological Research Laboratories, Brockwell Hall, London, (Eng.), under conditions which fulfil every requirement of modern science and under the immediate supervision of specialists of long and varied experience. The sera are not sent out until they have successfully passed rigorous sterility and toxicity tests; they are then issued in hermetically-sealed phials of convenient sizes.

Burroughs Wellcome & Co. act as distributing agents, and will endeavour to despatch orders for these sera immediately on receipt of letter or telegram.

Sera should be carefully kept in their original packings, in a cool, dark place, avoiding, as much as possible, variations of temperature.

'WELLCOME' BRAND—

,, ***Diphtheria Antitoxic Serum**

In hermetically-sealed phials and in syringe-containers of 1000, 2000, 3000 and 4000 Ehrlich units.

,, **†Concentrated Diphtheria Antitoxin**

In hermetically-sealed phials and in syringe-containers of 1000, 2000, 3000, 4000 and 5000 Ehrlich units.

The following Sera are issued in hermetically-sealed phials.

,, **Tetanus Antitoxic Serum**

In phials of 10 c.c. containing 1500 units, and in phials of 10 c.c. *(for veterinary diagnosis)* containing 1000 units.

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* 1000 units are contained in 2·5 c.c. or less

† 1000 units are contained in 1 c.c. or less

Sera, 'Wellcome' Brand—*continued*

'WELLCOME' BRAND—

,, **Anti-colon Bacillus Serum:** from horses immunised against many strains of *Bacillus coli*, obtained mostly from cases of peritonitis and puerperal fever :—

In phials containing 10 c.c. and 25 c.c.

,, **Anti-dysentery Serum:** from horses immunised against cultures of *Bacillus dysenteriæ* obtained from several cases of dysentery :—

In phials containing 25 c.c.

,, **Anti-gonococcus Serum:** from horses immunised against cultures of gonococci obtained from cases of urethritis and gonorrhœal conjunctivitis.

In phials containing 25 c.c.

,, **Anti-meningococcus Serum:** from horses immunised against cultures of various strains of the *Diplococcus intracellularis meningitidis* of Weichselbaum, obtained from several different sources :—

In phials containing 25 c.c.

,, **Anti-staphylococcus Serum, Polyvalent:** from horses immunised against various cultures of *Staphylococcus pyogenes aureus*, *albus* and *citreus* :—

In phials containing 10 c.c. and 25 c.c.

,, **Anti-streptococcus Serum, Erysipelas:** from horses immunised against cultures from typical cases of erysipelas :—

In phials containing 25 c.c.

,, **Anti-streptococcus Serum, Polyvalent:** from horses immunised against cultures of streptococci from a large number of sources, including organisms isolated from cases of :—

ERYSIPELAS, SCARLET FEVER, PUERPERAL FEVER, RHEUMATIC FEVER, SEPTICÆMIA, ANGINA, PNEUMONIA, ULCERATIVE ENDOCARDITIS.

In phials containing 10 c.c. and 25 c.c., also in syringe-containers of 10 c.c.

Sera, 'Wellcome' Brand—*continued*

'WELLCOME' BRAND—

,, **Anti-streptococcus Serum, Puerperal Fever:** from horses immunised against a number of cultures of *Streptococcus* from cases of puerperal fever :—

In phials containing 10 c.c. and 25 c.c.

,, **Anti-streptococcus Serum, Pyogenes:** from horses immunised against several cultures of *Streptococcus pyogenes* from fatal cases :—

In phials containing 25 c.c.

,, **Anti-streptococcus Serum, Rheumatic Fever:** from horses immunised against cultures from severe cases of acute rheumatism and of rheumatoid arthritis :—

In phials containing 25 c.c.

,, **Anti-streptococcus Serum, Scarlatina:** from horses immunised against cultures from a number of severe cases of scarlet fever :—

In phials containing 25 c.c.

,, **Anti-typhoid Serum:** from horses immunised against cultures of *Bacillus typhosus* from several cases of typhoid fever :—

In phials containing 25 c.c.

,, **Anti-venom Serum:** from horses immunised against the venom of the Cobra and Russel viper *(Daboia)*

In phials containing 25 c.c.

,, **Normal Horse Serum, No. 1**

In phials containing 10 c.c. and 25 c.c.

Also various other Sera issued under the 'Wellcome' Brand

Serum Syringes (B. W. & Co.) *(see pages* 200, 201*)*

Sewage and Water Analysis Case, 'Soloid' Brand, No. 502 *(see page* 175*)*

'Soamin' (Sodium Para-aminophenylarsonate)
(*Trade Mark*)

DOSE (*See special leaflet*)

An organic preparation of low toxicity as compared with arsenious acid or the inorganic salts of arsenic. It contains 22·8 per cent. of arsenium (As), and is soluble in three parts of water at body temperature and in five parts at 60° F. Used in syphilis, malaria, kala-azar, trypanosomiasis and other protozoal diseases. In bottles of 5 gm. and 30 gm.

For full particulars, see 'Soamin' booklet

Soaps, Toilet and Medicated
(*See* 'Dartring' Brand Products, *page* 191)

TRADE MARK 'SOLOID' BRAND PRODUCTS

The word 'SOLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

'Soloid' Brand Products are also issued in bottles of 500, with the exception of those put up in tubes only.

The series of 'Soloid' Brand products provides reliable antiseptics, astringents and anæsthetics; also convenient means of preparing stains for microscopic work, and test solutions for water, sewage or urine analysis. The portability, accuracy in strength, uniform activity and ready solubility, which characterise them, present great advantages over stock solutions. Each product is so standardised in weight as to produce, when added to the required quantity of solvent, a solution of definite strength. ('Soloid' Corrosive Sublimate, gr. 8·75, dissolved in 16 fl. oz. of water, forms a solution of 1 in 1000.)

TRADE MARK

'SOLOID' BRAND—	STRENGTH	Issued in bots. of	bots. of
,, Alkaline Compound (*see page* 226)			
,, Alum	gr. 10	—	100
,, Alum and Zinc Sulphate ...		25	—
℞ Aluminis ... ... gr. 15 Zinci Sulphatis ... gr. 15			

Write the Brand in full, thus: ℞ 'Soloid' — — —

'Soloid' Brand Products—*continued*

'SOLOID' BRAND—	STRENGTH	Issued in bots. of	bots. of
,, Alum and Zinc Compound, Strong ... ... ℞ Aluminis ... ... gr. 30 Zinci Sulphatis ... gr. 15		25	—
,, Antiseptic and Alkaline Compound (*see page* 226)			
,, Argenti Nitratis (*see* Silver Nitrate)			
,, Argyrol, tubes of 12	gr. 1	—	—
,, ,, ,, 6 ... ... One in one drachm of water = 1 in 10 solution (approx.).	gr. 5·45	—	—
,, Atropine Sulphate, tubes of 6 One in one drachm of water = 1 in 100 solution (approx.).	gr. 0·545	—	—
,, Atropine and Cocaine, tubes of 6 ... ... ℞ Atropinæ Sulphatis gr. 0·272 Cocainæ Hydrochloridi gr. 1·09 One in one drachm of water = 1 in 200 Atropine Sulphate, and 2 in 100 Cocaine Hydrochloride (approx.).		—	—
,, Black Mercurial Lotion ... One, powdered, and shaken with one fluid ounce of water, makes a lotion corresponding to Lotio Hydrargyri Nigra, P.B.		25	—
,, Boric Acid *(scented with Otto of Rose)*	gr. 6	25	—
,, Boric Acid *(unscented)* ...	gr. 15	50	—
,, Boric Acid and Zinc Sulphate *(scented with Otto of Rose)* ℞ Acidi Borici ... ... gr. 6 Zinci Sulphatis ... gr. 1/2		25	—
,, Carbolic Acid (Phenol), tubes of 25	gr. 5	—	—
,, ,, ,, ,, ,, 12	gr. 20	—	—
,, ,, ,, ,, ,, 6	gr. 60	—	—
,, Chinosol	gr. 1·75	25	—
,, ,, ...	gr. 8·75	25	100

'Soloid' Brand Products—*continued*

'SOLOID' BRAND—	STRENGTH	Issued in bots. of	bots. of
,, Cocaine Hydrochloride, tubes of 25	gr. 1/2	—	100
,, ,, ,, ,, ,,	gr. 1	—	100
,, ,, ,, ...	gr. 5	25	—
,, *Cocaine and Eucaine, tubes of 25, of each	gr. 1/2	—	—
,, Copper Sulphate	gr. 1	—	100
,, Corrosive Sublimate (Hydrarg. Perchlor.) (*Ophthalmic*), (*See page* 212)	gr. 1/1000		
,, Corrosive Sublimate (Hydrarg. Perchlor.) ... ... One in four fluid ounces of water = 1 in 1000 solution.	gr. 1·75	—	100
,, Corrosive Sublimate (Hydrarg. Perchlor.) ... ... One in one pint of water = 1 in 1000 solution.	gr. 8·75	25	100
,, Corrosive Sublimate (Hydrarg. Perchlor.) ... ... One in one pint of water = 1 in 500 solution.	gr. 17·5	25	100
,, Eucaine Hydrochloride tubes of 25	gr. 1*	—	—
,, ,, ,, ...	gr. 5	25	—
,, Eucaine Lactate	gr. 1	25	—
,, ,, ,, ...	gr. 5	25	—
,, 'Eucalyptia' Compound (*see page* 226)			
,, Goulard Lotion (*see* Lead Subacetate)			
,, Homatropine and Cocaine, tubes of 6 ... ... ℞ Homatropinæ Hydrobromidi ... ... gr. 0·545 Cocainæ Hydrochloridi ... ... gr. 1·09		—	—
,, Homatropine Hydrobromide, tubes of 6	gr. 0·545	—	—

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* Also issued in bottles of 500

'Soloid' Brand Products—*continued*

'SOLOID' BRAND—	STRENGTH	Issued in bots. of	bots. of
,, Homatropine Methylbromide and Cocaine, tubes of 6 ... ℞ Homatropinæ Methylbromidi ... ... gr. 0·545 Cocainæ Hydrochloridi ... ... gr. 1·09		—	—
,, Hydrarg. Perchlor. (*see* Corrosive Sublimate, *page* 212)			
,, Iodic-Hydrarg. (*see* Mercuric Potassium Iodide, *below*)			
,, Lead and Opium Lotion ... ℞ Plumbi Acetatis ... gr. 2 Tinct. Opii ... ... min. 20		25	—
,, Lead Subacetate ... ... One in five fluid ounces of distilled water yields a solution corresponding to Liquor Plumbi Subacetatis Dilutus.	gr. 10	25	—
,, Mercuric Chloride (*see* Corrosive Sublimate)			
,, Mercuric Potassium Iodide (*formerly known as* Iodic-Hydrarg.), tubes of 25 ... One in four ounces of water = 1 in 1000 solution (frequently known as Mercury Biniodide Solution).	gr. 1·75	—	100
,, Mercuric Potassium Iodide (*formerly known as* Iodic-Hydrarg.) ... ... One in 10 ounces of water = 1 in 1000 solution (frequently known as Mercury Biniodide Solution).	gr. 4·37	25	100
,, Mercuric Potassium Iodide (*formerly known as* Iodic-Hydrarg.) ... ... One in one pint of water = 1 in 1000 solution (frequently known as Mercury Biniodide Solution).	gr. 8·75	25	100
,, Mercury Oxycyanide, tubes of 25	0·1 gm. [gr. 1-1/2]	—	100
,, ,, ,, ...	0·25 gm. [gr. 3-3/4]	25	100
,, ,, ,, ...	0·5 gm. [gr. 7-3/4]	25	100

'Soloid' Brand Products—*continued*

'SOLOID' BRAND	STRENGTH	Issued in bots. of	bots. of
,, (Nasal)			
,, ,, Alkaline Compound ...	℞ Boracis ... ... gr. 5 Sodii Chloridi ... gr. 5	25	100
,, ,, Antiseptic and Alkaline Compound	℞ Sodii Bicarbonatis gr. 5 Acidi Carbolici ... gr. 1/2 Boracis ... ... gr. 5	25	100
,, ,, 'Eucalyptia' Compound	℞ Sodii Bicarbonatis gr. 8 Boracis ... ... gr. 8 Sodii Benzoatis ... gr. 1/3 Sodii Salicylatis gr. 1/3 Ol. Eucalypti ... min. 1/6 Thymol ... ... gr. 1/6 Menthol ... gr. 1/12 Ol. Gaultheriæ ... min. 1/12	25	100
,, ,, Phenol Compound ...	℞ Sodii Bicarbonatis gr. 12 Acidi Carbolici ... gr. 1-1/2 Sodii Chloridi ... gr. 2	25	—
,, ,, Sodium Bicarbonate Compound	℞ Sodii Bicarbonatis gr. 5 Boracis ... ... gr. 5 Sodii Chloridi ... gr. 5	25	100
,, ,, Sodium Bicarbonate Compound, Saccharated	℞ Sodii Bicarbonatis gr. 5 Boracis ... ... gr. 5 Sodii Chloridi ... gr. 5 Sacchari Albi ... gr. 5	25	100
,, Naso-Pharyngeal Compound	℞ Sodii Chloridi ... gr. 7 Boracis ... ... gr. 2-1/2 Acidi Borici ... gr. 3/4 Sodii Benzoatis ... gr. 1/2 Menthol ... gr. 1/50 Thymol ... gr. 1/100 Cocainæ Hydrochloridi gr. 1/6 Ol. Gaultheriæ ... min. 1/20	25	100

Write the Brand in full, thus: ℞ 'Soloid' — — —

'Soloid' Brand Products—*continued*

'SOLOID' BRAND—	STRENGTH	Issued in bots. of	bots. of
,, 'Nizin' (*Trade Mark*) ..	gr. 2	—	100
,, ,, ...	gr. 20	25	—
A zinc salt of sulphanilic acid			
,, Paraform	gr. 5	—	100
,, Phenol Compound (*see page* 226)			
,, Potassium Permanganate ...	gr. 1	—	100
,, ,, ,, ...	gr. 5	25	100
,, Potassium Permanganate and Alum		—	100
℞ Potassii Permanganatis gr. 3 Aluminis ... ... gr. 5			
,, Protargol	gr. 1	—	100
,, ,, ...	gr. 4	25	100
,, Saline Compound, tubes of 12		—	—
℞ Calcii Chloridi ... gr. 7/10 Potassii Chloridi ... gr. 7/10 Sodii Bicarbonatis... gr. 7/20 Sodii Chloridi ... gr. 31-1/2 Dextrosi ... ... gr. 3-1/2 Two, dissolved in one pint of boiled (sterile) water for intravenous injection at 100° F.			
,, Silver Nitrate, tubes of 25 ...	gr. 1*	—	—
,, ,, ,, ...	gr. 5	25	—
Sodium Bicarbonate	gr. 44	25	—
One in five fluid ounces of water = 2 per cent. solution (approx.).			
,, Sodium Bicarbonate Compound (*see page* 226)			
,, Sodium Bicarbonate Compound, Saccharated (*see page* 226)			
,, Sodium Chloride, tubes of 12	gr. 40	—	—
Two, dissolved in one pint of boiled (sterile) water form a solution containing 0·9 per cent. of Sodium Chloride for intravenous injection at 100° F.			
,, Sodium Chloride, tubes of 6	gr. 80	—	—
One, dissolved in one pint of boiled (sterile) water, for intravenous injection at 100° F.			

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* Also issued in bottles of 500

Write the
Brand in
full, thus: ℞ 'Soloid' — — —

'Soloid' Brand Products—*continued*

'SOLOID' BRAND—	STRENGTH	Issued in bots. of	Issued in bots. of
,, Sodium Citrate and Sodium Chloride		25	100
℞ Sodii Citratis ... ... gr. 3 Sodii Chloridi ... ... gr. 16			
,, Zinc Chloride	gr. 5	25	—
,, Zinc Permanganate	gr. 1/8	—	100
,, Zinc Sulphate	gr. 1	—	100
,, ,, ,, ...	gr. 10	—	100
,, Zinc Sulphocarbolate ...	gr. 2	—	100
,, ,, ,, ...	gr. 10	—	100

Also a wide range of other products issued under the 'Soloid' Brand.

'SOLOID' BRAND PRODUCTS FOR TESTING PURPOSES, etc.

For Urine Analysis

'SOLOID' BRAND—	STRENGTH	Issued in tubes of
,, Citric Acid	gr. 1	20
,, Fehling's Test, *for preparing Fehling's Solution*, cartons of 24		
,, Indigo Test for Sugar (Sodium Nitrophenylpropiolate)	gr. 1/4	20
,, Picric Acid	gr. 1	20
,, Potassium Ferrocyanide	gr. 1	20
,, Salicyl-sulphonic Acid	gr. 2	16

For Water Analysis

'SOLOID' BRAND—	STRENGTH
,, Ammonium Chloride	0·00016 gm.
,, Lead Acetate	0·0184 gm.
,, Meta-phenylenediamine Sulphate	0·01 gm.
,, Oxalic Acid	0·1 gm.
,, Potassium Chromate	0·0065 gm.
,, Potassium Ferrocyanide	0·013 gm.
,, Potassium Nitrate	0·00144 gm.

'Soloid' Brand Products for Testing Purposes, etc.—*continued*

For Water Analysis—*continued*

'SOLOID' BRAND—	STRENGTH
,, Potassium Permanganate	0·00395 gm.
,, Silver Nitrate	0·0096 gm.
,, Soap	
,, Sodium Acid Sulphate	0·324 gm.
,, Zinc Dust	0·13 gm.
,, Zinc Sulphide	0·25 gm.

In packages of 25

,, Nessler's Solution, in hermetically-sealed glass capsules.

Boxes of 30 capsules, each containing ...	0·5 c.c.
,, 24 ,, ,, ...	2 c.c.

For Sewage Analysis

'SOLOID' BRAND—	STRENGTH
,, Oxalic Acid	0·0079 gm.
,, Potassium Permanganate	0·00395 gm.
,, Pyrogallic Acid	0·032 gm.
,, Sodium Hydroxide	0·13 gm.

In packages of 25

Test Indicators

'SOLOID' BRAND—
,, *Indigo-Carmine
,, *Lacmoid
,, *Methyl Orange

'SOLOID' BRAND—
,, *Phenolphthalein
,, *Rosolic Acid
,, Starch, 0·5 gm.

* One dissolved in 10 c.c. of solvent forms the Test Indicator

In tubes of 10

Microscopic Stains

'SOLOID' BRAND—	STRENGTH
,, Bismarck Brown, pure	0·1 gm.
,, Borax Methylene Blue	
,, Ehrlich Triple Stain	
,, Eosin, pure	0·1 gm.
,, Eosin-Azur (for Giemsa staining)	0·038 gm.
,, Eosin-Methylene Blue (Louis Jenner's Stain)	0·05 gm.

'Soloid' Brand Products for Testing Purposes, etc.—*continued*

Microscopic Stains—*continued*

'SOLOID' BRAND—	STRENGTH
,, Fuchsine (Basic), pure	0·1 gm.
,, Gentian Violet, pure	0·1 gm.
,, Gram's Iodine Solution	15 c.c.
,, Hæmalum	
,, Hæmatoxylin, pure	0·1 gm.
,, Methyl Violet, pure	0·1 gm.
,, Methylene Blue, pure	0·1 gm.
,, Romanowsky Stain (Leishman's Powder)	0·015 gm.
,, Thionin Blue, pure	0·1 gm.
,, Toison Blood Fluid	

In tubes of 6

Methyl Alcohol, pure *(see page* 209*)*

Culture Media

'SOLOID' BRAND—

,, Bile Salt Agar-Agar (MacConkey)
,, Conradi-Drigalski Medium
,, Nutrient Agar-Agar
,, Nutrient Broth

} *In tubes of* 6

Also a wide range of other products issued under the 'Soloid' Brand.

Strophanthus Tincture (B. W. & Co.)

(Physiologically standardised, Wellcome Physiological Research Laboratories.)

Prepared in accordance with the 1898 British Pharmacopœia, from carefully-selected strophanthus seeds.

In bottles containing ½ and 1 fl. oz. and 1 lb. (18 fl. oz.)

Strophanthus Tincture, 'Tabloid' Brand (*see page* 260)

Suppositories (*see* 'Enule' Rectal Suppositories, *pages* 196-197; *and* 'Hazeline' Suppositories, *page* 199)

Surgical Dressings, 'Tabloid' Brand (*see pages* 191-194)

Syringes, Dental Hypodermic, and Serum (*see pages* 200, 201)

TRADE MARK 'TABLOID' BRAND PRODUCTS

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

'Tabloid' Brand Products are also issued in bottles of 500, with the exception of those put up in tubes only.

'TABLOID' Brand Products are prepared from ingredients of the highest quality and of extreme purity. They are accurate in dosage, and keep well in any climate. Special consideration has been given to adapting 'Tabloid' preparations to particular purposes. Those intended for general therapeutic effect are made to disintegrate immediately; those intended to produce local effects (as upon the throat) dissolve slowly and enable prolonged application of the medicament to the affected part; unpleasant drugs are coated with a thin film of white sugar, readily soluble in the stomach, while those intended to act after leaving the stomach are coated with keratin, soluble only in the alkaline secretions of the intestine.

Accurate dosage

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
A			
,, Acetanilide (*see* Antifebrin)			
,, Aconite Tincture, min. 1/4 ...	1 frequently	100	—
,, ,, ,, min. 1 ...	1 frequently	100	—
,, ,, ,, min. 5 ...	1 to 3	36	100
,, Aloes and Iron (B.P. Pill), gr. 4	1 to 2	—	100
,, Aloes and Myrrh (B.P. Pill), gr. 4	1 to 2	—	100
,, Aloin, gr. 1/10	1 frequently	100	—
,, ,, gr. 1/2	1 to 4	25	100
,, Aloin Compound	1 to 2 after meals, or 1 to 3 at bed-time	50	100
℞ Aloini ... ... gr. 1/5 Strychninæ Sulphatis gr. 1/60 Ext. Belladonnæ .. gr. 1/8 Pulv. Ipecacuanhæ ... gr. 1/16 Stomachic and tonic laxative combination of especial value in chronic constipation.			

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Ammoniated Quinine ... Each contains Quinine and Ammonium Bicarbonate to correspond with one fluid drachm of the official tincture.	1	25	100
,, Ammonium Bromide, gr. 5 ...	1 to 6	—	100
,, ,, ,, gr. 10	1 to 3	—	100
,, Ammonium Carbonate, gr. 3	1 to 3	—	100
,, Ammonium Chloride, gr. 3...	1 to 6	25	100
,, ,, ,, gr. 5...	1 to 4	—	100
,, ,, ,, gr. 10	1 to 2	—	100
,, Ammonium Chloride and Borax ... ... ℞ Ammonii Chloridi... gr. 1-1/4 Boracis ... ... gr. 3-3/4	1 as required	—	100
,, Ammonium Chloride and Liquorice ... ... ℞ Ammonii Chloridi... gr. 3 Ext. Glycyrrhizæ ... gr. 2	1 as required	25	100
,, Ammonium Chloride Compound ... ... ℞ Ammonii Chloridi... gr. 1 Potassii Chloratis ... gr. 2 Pulv. Cubebæ ... gr. 1/4 Ext. Glycyrrhizæ ... gr. 1 Of special value in catarrh of the pharynx, larynx, etc.	1 as required	25	100
,, Ammonium Hippurate, gr. 1	1 or more	—	100
,, Antifebrin (Acetanilide), gr. 2	1 to 2	25	100
,, ,, ,, gr. 5	1 (*in special cases*)	25	100
,, Antifebrin Compound ... ℞ Antifebrini (Acetanilidi), P. B. ... gr. 2 Camphoræ Monobromatæ ... ... gr. 1 Caffeinæ Citratis ... gr. 1	1	—	100
,, Antimony, Tartarated, gr. 1/50	1 to 3	100	—
,, Antipyrine (Phenazone), gr. 2-1/2	1 or more	25	100
,, ,, ,, gr. 5	1 to 4	25	100
,, 'Aol' (*Trade Mark*), 0·3 gm. [gr. 4-1/2] (Capsule), a derivative of *Santalum album*, boxes of 50 ...	2 or more	—	—

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

		Issued in	
'TABLOID' BRAND—	DOSE	oval bots. of	bots. of
,, Apomorphine Hydrochloride, gr. 1/50	1 repeated	50	—
,, Apomorphine Hydrochloride, and Morphine Hydrochloride, of each, 0·0025 gm. [gr. 1/26]	1 to 4	25	—
,, Apomorphine Compound ... ℞ Apomorphinæ Hydrochloridi gr. 1/50 Ammonii Chloridi gr. 3 Ext. Glycyrrhizæ gr. 1-1/2	1 as required	25	100
,, Aromatic Chalk Powder with Opium, B.P., gr. 5 ...	2 to 4 or more	25	100
,, Arsenious Acid, gr. 1/100 ...	1 to 6	100	—
,, ,, ,, gr. 1/50 ...	1 to 3	100	—
,, ,, ,, gr. 1/20 ...	1	100	—
,, Arsenical Compound... ... ℞ Acidi Arseniosi ... gr. 1/100 Ferri Sulph. Exsicc. gr. 1 Calcii Sulphidi ... gr. 1/4 Ext. Gentianæ ... gr. 2	1 to 2	—	100
,, Asafetida and Opium Compound ... ... ℞ Asafetidæ ... ... gr. 1 Camphoræ ... ... gr. 1 Pulv. Opii .. ... gr. 1 Pulv. Piperis Nigri gr. 1	1 to 2	—	100
,, 'Aspirin,' gr. 5	1 to 3	25	100
,, Astringent Mixture (corresponding to the formula of the Board of Health, London, Eng.) ... ... ℞ Conf. Aromat. (P.B., 1885) gr. 4-1/2 Pulv. pro Mist. Cretæ gr. 20 Ammonii Bicarb. ... gr. 1/2 Tinct. Card. Co. ... min. 9 Tinct. Catechu ... min. 15 Tinct. Opii ... min. 1-1/2 Ol. Cinnamomi ... min. 1/8	1 to 2	—	100
,, Atropine Sulphate, 0·0005 gm. [gr. 1/130]	1	25	—

Write the
Brand in
full, thus: 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
B			
,, Belladonna Tincture, min. 1	1 frequently	100	—
,, ,, ,, min. 5	1 to 3	48	100
,, Benzoic Acid, gr. 5	1 to 3	—	100
,, Benzoic Acid Compound, without Cocaine ... .. ℞ Acidi Benzoici ... gr. 1/2 Codeinæ ... ... gr. 1/10 Menthol ... ... gr. 1/10 Pulv. Ipecacuanhæ gr. 1/10 Ol. Menthæ Piperitæ min. 1/16 Gummi Rubri ... *q.s.* Highly efficient in the irritating cough of pharyngitis, etc.	1 as required	25	100
,, Benzo-naphthol, gr. 5 ...	1 to 2	—	100
,, Beta-naphthol, gr. 3... ...	1 to 3	—	100
,, Beta-naphthol Compound ... ℞ Beta-naphthol ... gr. 1 Carbonis Ligni ... gr. 4 Ol. Menthæ Pip. ... min. 1/2	1 to 4	25	100
,, Bismuth Carbonate, gr. 5 ...	1 to 4	25	100
,, Bismuth Salicylate (*Physiologically Pure*), gr. 5 ...	1 to 4	25	100
,, Bismuth Subgallate, gr. 5 ...	1 to 4	25	100
,, Bismuth Subnitrate, gr. 5 ...	1 to 4	25	100
,, ,, ,, gr. 10 ...	1 to 2	—	100
,, Bismuth and Dover Powder ℞ Bismuthi Subnit. ... gr. 2-1/2 Pulv. Ipecacuanhæ c̄ Opio ... gr. 2-1/2	1 to 6	—	100
,, Bismuth and Soda ... ... ℞ Bismuthi Subnit. ... gr. 2-1/2 Sodii Bicarbonatis ... gr. 2-1/2	1 to 4 or more	—	100
,, Bismuth Subsantonate Compound, bottles of 25 ... ℞ Bismuthi Subsantonatis gr. 4 Phenolphthalein ... gr. 1-1/2 (Made with a chocolate basis)	1 to 2	—	100

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	Issued in bots. of
,, Bismuth, Rhubarb and Soda... ℞ Bismuthi Subnit. ... gr. 3 Pulv. Rhei ... ... gr. 1 Sodii Bicarbonatis ... gr. 2 Pleasant and easy to take: the unpleasantness of the ordinary nauseous mixture being avoided.	1 to 4	25	100
,, Blaud (Pil. Ferrugin.), gr. 5 ...	1 to 3	—	100
,, ,, ,, gr. 10 Each represents 20 per cent. of permanent ferrous carbonate.	1 to 2	—	100
,, Blaud Pill and Aloin... ... ℞ Pil. Ferrugin. (Blaud) gr. 5 (= 20 Ferri Carbonatis) Aloini ... ... gr. 1/20	1 to 4	—	100
,, Blaud Pill and Arsenic ... ℞ Pil. Ferrugin. (Blaud) gr. 5 (= 20 Ferri Carbonatis) Acidi Arseniosi ... gr. 1/64	1 to 4	—	100
,, Blaud Pill and Cascara ... ℞ Pil. Ferrugin. (Blaud) gr. 5 (= 20 Ferri Carbonatis) Ext. Cascaræ Sagradæ ... gr. 1/2	1 increased to 4	—	100
,, Blaud Pill, Arsenic and Strychnine ... ... ℞ Pil. Ferrugin. (Bland) gr. 5 (= 20 Ferri Carbonatis) Acidi Arseniosi ... gr. 1/100 Strychninæ ... ... gr. 1/100	1 to 4	—	100
,, Blaud Pill Compound ... ℞ Pil. Ferrugin. (Blaud) gr. 10 (= 20 Ferri Carbonatis) Pulv. Capsici ... gr. 1/4 Aloini ... ... gr. 1/30 Strychninæ ... ... gr. 1/30 Acidi Arseniosi ... gr. 1/30	1	—	100
,, Blue Pill, gr. 4 ... ... Each contains gr. 1-1/3 of pure metallic Mercury.	1 to 2	25	100
,, Blue Pill, Colocynth and Hyoscyamus ... ... ℞ Pil. Hydrargyri, P.B. gr. 2 Pil. Colocynthidis et Hyoscyami, P.B. gr. 4	1 to 2	25	100

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Blue Pill and Rhubarb Compound ... ... ℞ Pil. Hydrargyri, P.B. gr. 2-1/2 Pil. Rhei Comp., P.B. gr. 2-1/2	1 to 2	—	100
,, Blue Pill, Squill and Digitalis ℞ Pil. Hydrargyri, P.B. gr. 1 Pulv. Scillæ ... gr. 1-1/2 Pulv. Digitalis ... gr. 1	1 to 2	—	100
,, Bone Medulla, gr. 5 (Capsule), boxes of 50	1 or more	—	—
,, Borax, gr. 5	1 to 4 or more	25	100
,, Boric Acid, gr. 5	1 to 3	—	100
,, Bromides Compound (*see* Sodium Bromide Compound)			
,, Butyl-Chloral Hydrate and Gelsemine ... ... ℞ Butyl-Chloral Hydratis... gr. 3 Gelseminæ Hydrochloridi ... gr. 1/200	1	—	100

C

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Caffeine Citrate, gr. 2 ...	1 or more	—	100
,, Caffeine Citrate, Effervescent, B.P., gr. 60, tubes of 25 ...	1 to 2	—	—
,, Caffeine Compound ... ... ℞ Caffeinæ ... ... gr. 1 Antipyrini (Phenazoni, P.B.) gr. 3	1 to 4	25	100
,, Calcium Carbonate Compound ℞ Calcii Carb. Præcip. gr. 3-1/2 Mag. Carb. Pond. gr. 2-1/2 Bismuthi Carbonatis gr. 2	1 to 4 before meals, or 1 occasionally	25	100
,, Calcium Iodo-ricinoleate, gr. 3 (Capsule), boxes of 50 ...	1 to 3	—	—
,, Calcium Lactate, gr. 5 ...	1 to 3	25	100
,, Calcium Sulphide, gr. 1/10 ...	1 or more	100	—
,, ,, ,, gr. 1/4 ...	1 to 4	—	100
,, ,, ,, gr. 1/2 ...	1 to 2	—	100
,, ,, ,, gr. 1 ...	1	—	100

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Calomel, gr. 1/10, gr. 1/6, gr. 1/4 and gr. 1/2 ...	1 or more	100	—
,, ,, gr. 1	1 to 5	—	100
,, ,, gr. 2	1 to 3	—	100
,, ,, gr. 3	1 to 2	—	100
,, ,, gr. 5	1	—	100
,, Calomel and Creosote ... ℞ Hydrarg. Subchlor. gr. 1/6 Creosoti ... ... min. 1	1 to 5	—	100
,, Calomel and Jalap ... ... ℞ Hydrarg. Subchlor. gr. 1 Pulv. Jalapæ ... gr. 2	1 to 4	—	100
,, Calomel and Piperine, of each, gr. 1/2	1 repeated	—	100
,, Calomel, gr. 1/10, and Sodium Bicarbonate, gr. 1	1 or more	25	100
,, Calomel, gr. 1/4, and Sodium Bicarbonate, gr. 1	1 or more	25	100
,, Calomel, gr. 1/2, and Sodium Bicarbonate, gr. 2-1/2 ...	1 or more	25	100
,, Calomel, gr. 1, and Sodium Bicarbonate, gr. 5	1 or more	25	100
,, Calomel Compound (Plummer Pill, B.P.), gr. 4	1 to 2	25	100
,, Camphor Compound Tincture (Paregoric), min. 2 ...	1 frequently	100	—
,, Camphor Compound Tincture (Paregoric), min. 5 ...	1 frequently	48	100
,, Camphor Compound Tincture (Paregoric), min. 15 ...	1 to 4	36	100
,, Camphor Essence (Saturated)	2 to 3	25	100
,, Cane Sugar, gr. 3		—	100
,, Cannabis Indica Tincture, B.P., min. 5 ... ... Prepared from Physiologically-controlled Extract.	1 to 3	48	100
,, Capsicum Tincture, min. 1 ...	1 frequently	100	—
,, ,, ,, min. 5 ...	1 to 3 or more	—	100

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND —	DOSE	Issued in oval bots. of	Issued in bots. of
,, Capsules— *See* 'Aol,' Bone Medulla, Calcium Iodo-ricinoleate, Carbolic Acid, Castor Oil, Juniper Oil, Phenol and Menthol Compound, Sandal Wood Oil, Terebene, Turpentine Oil, Rectified.			
,, Carbolic Acid (Phenol), gr. 1/4 (*for the throat*)	1 as required	25	100
,, Carbolic Acid (Phenol), gr. 1/2 (*for the throat*)	1 as required	25	100
,, Carbolic Acid (Phenol), gr. 1 (Capsule), boxes of 24 ...	1 to 3	—	—
,, Carbolic Acid with Slippery Elm, bottles of 25 ... ... Each contains Carbolic Acid, gr. 1/2	1 occasionally		100
,, Carlsbad Salt, Effervescent, Artificial, tubes of 25 ...	1 or more as required	—	—
,, Cascara Sagrada (Dry Extract), gr. 1	1 or more	25	100
,, ,, ,, ,, gr. 2	1 to 4	25	100
,, ,, ,, ,, gr. 3	1 to 3	25	100
,, ,, ,, ,, gr. 4	1 to 2	25	100
,, ,, ,, ,, gr. 5 The uniform reliability of 'Tabloid' Cascara Sagrada has established for it the premier position in the estimation of physicians throughout the world.	1 as required	25	100
,, Cascara Compound ... ... ℞ Ext. Cascaræ Sagrad. gr. 1 Ext. Euonymi Sicci gr. 1/2 Iridini ... ... gr. 1/2 Ext. Nucis Vomicæ gr. 1/16 Ext. Hyoscyami Vir. gr. 1/3	1 to 4	25	100
,, Cascara and Gentian Compound ℞ Ext. Cascaræ Sagrad. gr. 2 Ext. Nucis Vomicæ gr. 1/5 Ext. Belladonnæ ... gr. 1/10 Ext. Gentianæ ... gr. 1 Capsicini ... ... gr. 1/10	1 to 3	25	100

B.P. OR BETTER

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	Issued in bots. of
,, Castor Oil, min. 5 (Capsule), boxes of 50	1 or more	—	—
,, Cathartic Compound... ...	1 to 2	25	100
℞ Ext. Colocynth. Co. gr. 1-1/3 Hydrarg. Subchlor. gr. 1 Ext. Jalapæ ... gr. 1 Pulv. Cambogiæ ... gr. 1/4 A cathartic compound of exceptional purity of ingredients and of proved reliability.			
,, Cerebrin, gr. 5	1 or more	—	100
,, Cerium Oxalate, gr. 5 ...	1 to 2	—	100
,, Charcoal (*Pure Willow*), gr. 5, bottles of 40	1 or more as required	—	100
,, Chemical Food (Phosphates Compound), dr. 1/2 ...	1 to 2	25	100
Containing the combined Phosphates of Iron, Calcium, Sodium and Potassium, equivalent to drachm 1/2 of Standard Compound Syrup of Phosphates.			
,, Chemical Food (Phosphates Compound), dr. 1	1	25	100
Equivalent to drachm 1 of Standard Compound Syrup of Phosphates. Possesses the advantages of permanence, portability, and the absence of free phosphoric acid present in the ordinary syrup as a solvent.			
,, Chinosol, gr. 5	1	25	100
,, Chloralamide, gr. 5	3 to 6	—	100
,, Chloral Hydrate, gr. 5 ...	1 to 4	—	100
,, ,, ,, gr. 10 ...	1 to 2	—	100
,, Chocolate, gr. 60, boxes of 12		—	—
,, Cinchona Tincture, min. 30	1 to 2	36	100
,, Cinchona Compound Tincture, min. 30	1 to 2	25	100
,, Citric Acid, gr. 5	1 to 4	—	100
Cocaine Hydrochloride (*see* 'Soloid' Brand Products, *page* 224)			

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	bots. of
,, Cocoa Essence, gr. 60, boxes of 12		—	—
,, Codeine, gr. 1/4	1 to 4 or more	25	100
,, ,, gr. 1/2	1 to 4	25	100
,, Codeine and Nux Vomica ... ℞ Codeinæ Phosphatis gr. 1 Ext. Nucis Vomicæ gr. 1/4	1 to 2	25	—
,, 'Coffee-Mint' ... ... ℞ Sodii Bicarb. ... gr. 3 Ammonii Bicarb. ... gr. 1/16 Ext. Coffeæ ... gr. 1/2 Cerii Oxalatis ... gr. 1/4 Ol. Menthæ Piperitæ *q.s.* Gastric and general stimulant, especially valuable in flatulence, in the nausea associated with liver disorder, and in the vomiting of pregnancy.	1 to 4 or more	25	100
,, Colchicine Salicylate, gr. 1/32	1 to 2	—	100
,, Colchicum Compound ... ℞ Ext. Colchici ... gr. 1/2 Acidi Salicylici ... gr. 3	1 to 2	—	100
,, Colocynth and Hyoscyamus (B. P. Pill), gr. 4	1 to 2	—	100
,, Colocynth Compound (B. P. Pill), gr. 4	1 to 2	—	100
,, Corrosive Sublimate (*see* Hydrarg. Perchlor., *page* 245)			
,, Cotarnine Hydrochloride, gr. 3/4, bottles of 25 ...	1 to 3	—	—
,, Cubeb and Belladonna, Effervescent ... ... ℞ Pulv. Cubebæ ... gr. 1/2 Ext. Belladonnæ ... gr. 1/20	1 as required	—	100
,, Cubeb Compound ... ... ℞ Oleo-resinæ Cubebæ gr. 1/4 Ammonii Chloridi... gr. 1/2 Glycyrrhizini Ammoniatæ gr. 1/4	1 as required	25	100
D			
,, Dentifrice		—	100
,, Didymin (Testicular Substance), gr. 5	1 increased to 4	—	100

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products *continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	 bots. of
,, Digitalin (Amorphous), gr. 1/100	1 to 3	50	—
,, Digitalin (Crystalline), gr. 1/250	1	50	—
,, Digitalis Tincture, min. 1 ...	1 frequently	100	—
,, ,, ,, min. 5 ... Prepared from Physiologically-standardised Tincture.	1	48	100
,, Donovan Solution, min. 5 ... One represents min. 5 of Liq. Arsenii et Hydrargyri Iodidi, P.B., containing Arsenious Iodide and Mercuric Iodide, of each, gr. 1/22.	1 to 4	—	100
,, Dover Powder (Ipecacuanha with Opium), gr. 1/4 ... Each contains Opium and Ipecacuanha, of each, gr. 1/40.	1 frequently	100	—
,, Dover Powder (Ipecacuanha with Opium), gr. 5 ... Each contains Opium and Ipecacuanha, of each, gr. 1/2.	1 to 3	25	100
E			
,, Easton Syrup (Iron Phosphate with Quinine and Strychnine), dr. 1/2	1 to 2	25	100
,, Easton Syrup (Iron Phosphate with Quinine and Strychnine), dr. 1	1	25	100
,, Effervescent Products *See* Caffeine Citrate, Carlsbad Salt, Cubeb and Belladonna, Kissingen Salt, Lithium Citrate, Lithium Citrate and Sodium Sulphate, Magnesium Citrate, Magnesium Sulphate, Piperazine, Quinine Bisulphate and Potassium Citrate, Seltzer Salt, Sodium Phosphate, Sodium Salicylate, Sodium Sulphate, Sodium Sulphate Compound, Three Bromides, Vichy Salts.			
,, Elaterin, gr. 1/40	1 to 4	25	—

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

		Issued in	
'TABLOID' BRAND—	DOSE	oval bots. of	bots. of
,, 'Epinine' Compound *(Trade Mark)* ℞ 'Epinine' ... ... gr. 1/1000 Heroin Hydrochloridi gr. 1/100 Pulv. Ipecacuanhæ gr. 1/50 Acidi Benzoici ... gr. 1/40 Ol. Gaultheriæ ... min. 1/30 Controls local congestion of larynx and pharynx. Made with a demulcent base and dissolves slowly, allowing prolonged application.	1	25	100
,, Ergotin (Ergot Extract, B.P.), gr. 1	1 to 4 or more	—	100
,, ,, ,, ,, gr. 2	1 to 4	—	100
,, ,, ,, ,, gr. 3	1 to 3	—	100
,, Ergotin and Strychnine ... ℞ Ergotini (Ext. Ergotæ, P.B.) gr. 3 Strychninæ Sulphatis gr. 1/30	1 to 2	—	100
,, Erythrol Tetranitrate (Tetranitrin), gr. 1/4, tubes of 25...	1 to 4	—	—
,, Erythrol Tetranitrate (Tetranitrin), gr. 1/2	1 to 2	25	—
,, Erythrol Tetranitrate (Tetranitrin), gr. 1	1	12	—
,, Euonymin (Euonymus Dry Extract, B.P.), gr. 1/8 ...	1 to 4 or more	50	—
,, Euonymin (Euonymus Dry Extract, B.P.), gr. 1/2 ...	1 to 4	50	—
,, Euquinine, gr. 5	1 to 2	25	100
,, Exalgine, gr. 2	1 to 2	—	100

F

,, Fellis Bovini Purificati (*see* Ox Bile, *page* 252)

,, Fellis Porcini Purificati (*see* Pig Bile, *page* 254)

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	Issued in bots. of
,, Ferric Chloride, min. 10 ... Each represents the amount of Ferric Chloride contained in min. 10 of Tinct. Ferri Perchloridi, P.B., with a small quantity of Ammonium Chloride as a vehicle.	1	—	100
,, Ferric Chloride and Arsenic... ℞ Tinct. Ferri Perchlor. min. 10 Acidi Arseniosi ... gr. 1/30	1	-	100
,, Ferri Redacti (*see* Reduced Iron, *page* 257)			
,, Ferri Sulphatis (Exsicc.) (*see* Iron Sulphate, dried, *page* 247)			
,, Ferruginous (*see* Blaud Pill and combinations, *page* 235)			
,, Ferrum (*see* Iron, *pages* 247, 248)			
G			
,, Galbanum Compound (Asafetida Compound), B.P. Pill, gr. 4	1 to 2	—	100
,, Gelsemium Tincture, min. 5...	1 to 3	48	100
,, Gentian and Soda Compound (Mist. Gentianæ Alkalina) ℞ Sodii Bicarbonatis ... gr. 3 { Ammonii Carb. { = Sp. Ammon. Arom. min. 3 Inf. Gentianæ Co. fl. dr. 2-1/2	1 to 4 or more	—	100
,, 'Gingament' *(Trade Mark)*, (Neutralising Compound)... ℞ Sodii Bicarbonatis ... gr. 5 Ammonii Bicarbonatis gr. 1/12 Gingerini, Saccharini, Ol. Menthæ Piperitæ, āā *q.s.*	1 or more	25	100
,, Ginger Essence (B.P. '85), min. 5 ...	1 to 4	48	100
,, ,, ,, min. 10 ...	1 to 2	—	100

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	bots. of
,, Glycerophosphates Compound, dr. 1/2 ... ... Each presents the amount of Calcium, Sodium, Potassium, Magnesium and Iron Glycerophosphates, with Strychnine Glycerophosphate, gr. 1/800, Pepsin, Diastase and Kola, contained in 1/2 fluid drachm of Syrup of Glycerophosphates.	1 to 8	25	100
,, Green Dye, Aniline, gr. 30, tubes of 12		—	—
,, Gregory Powder (Rhubarb Compound Powder), gr. 5... Each contains: Rhubarb, gr. 1-1/9; Heavy Magnesia, gr. 3-1/3; and Ginger, gr. 5/9.	1 to 4 or more	25	100
,, Grey Powder (Hydrarg. cum Cretâ), gr. 1/4	1 repeated	100	—
,, ,, ,, ,, gr. 1/3	1 repeated	100	—
,, ,, ,, ,, gr. 1/2	1 repeated	100	—
,, ,, ,, ,, gr. 1	1 to 5	100	—
,, ,, ,, ,, gr. 2	1 to 3	—	100
,, ,, ,, ,, gr. 3	1 to 2	—	100
,, ,, ,, ,, gr. 5	1	—	100
,, Grey Powder and Dover Powder, of each, gr. 1/2 ... Each contains: Mercury, gr. 1/6; Opium and Ipecacuanha, of each, gr. 1/20.	1 to 5 or more	—	100
,, Grey Powder and Dover Powder, of each, gr. 1 ... Each contains: Mercury, gr. 1/3; Opium and Ipecacuanha, of each, gr. 1/10.	1 to 5	—	100
,, Grey Powder and Opium ... ℞ Hydrarg. cum Cretâ gr. 1 Pulveris Opii ... gr. 1/6	1 to 5	—	100
,, Grey Powder, gr. 1/2, and Sodium Bicarb., gr. 2-1/2...	1 repeated	—	100
,, Grey Powder, gr. 1, and Sodium Bicarbonate, gr. 5	1 to 5	25	100

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
„ Grey Powder, Opium and Quinine ... ... ℞ Hydrarg. cum Cretâ gr. 1-1/2 Extracti Opii ... gr. 1/6 Quininæ Sulphatis gr. 1-1/2	1 to 3	—	100
„ Guaiacol Camphorate, gr. 5	1 to 2 increased	25	100
„ Guaiacol Carbonate, gr. 5 ...	1 to 2	25	100
„ Guaiacum Resin, gr. 5 ...	1 to 3	25	100
„ Guaiacum and Sulphur ... ℞ Guaiaci Resinæ ... gr. 3 Sulphuris Præcip.... gr. 3	1 to 4	25	100
„ Guaiacum and Quinine Compound ... ... ℞ Guaiaci Resinæ ... gr. 2 Sulphuris ... ... gr. 2 Quininæ Salicylatis gr. 1/2	1 to 4	—	100

H

„ Hæmoglobin, gr. 5	1 or more	—	100
„ Heroin Hydrochloride, gr. 1/25	1 to 4	25	100
„ „ „ gr. 1/10	1	—	100
„ Hydrarg. et Colocynth et Hyoscy. (*see* Blue Pill, Colocynth and Hyoscyamus, *page* 235)			
„ Hydrarg. c. Cretâ (*see* Grey Powder)			
„ Hydrarg. Iodid. Flavi, gr. 1/8	1 to 4	25	100
„ Hydrarg. Iodid. Rubri, gr. 1/20	1	50	—
„ „ „ „ gr. 1/16	1	50	—
„ Hydrarg. Iodid. Viridis, gr. 1/8	1 to 4 or more	50	—
„ Hydrarg. Perchlor., gr. 1/100	1 to 4 or more	100	—
„ „ „ gr. 1/16	1	100	—
„ Hydrarg. Perchlor., gr. 1/32, et Potass. Iodid., gr. 2-1/2	1 to 2	—	100

'Tabloid' Brand Products *continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	Issued in bots. of
,, Hydrarg. Perchlor., gr. 1/16, et Potass. Iodid., gr. 5 ...	1	—	100
,, Hydrastine Hydrochloride, gr. 1/4	1 to 4 repeated	25	100
,, Hydrastine Compound ... ℞ Hydrastinæ Hydrochloridi gr. 1/4 Ext. Ergotæ (Ergotini), P.B. gr. 1/2 Cannabinæ Tannatis gr. 1/2	1 to 3 repeated	25	100
,, Hydrastine Compound and Cotarnine Hydrochloride ... ℞ Hydrastinæ Hydrochloridi gr. 1/4 Ext. Ergotæ (Ergotini), P.B. gr. 1/2 Cannabinæ Tannatis gr. 1/2 Cotarninæ Hydrochloridi gr. 1/4	1 to 3 repeated	25	100
,, Hyoscine Hydrobromide, 0·0003 gm. [gr. 1/216] ...	1 to 2	—	100
,, Hyoscyamus and Camphor Compound ... ... ℞ Tinct. Camphoræ Comp. min. 10 Ext. Hyoscyami Viridis gr. 1 Pulv. Ipecacuanhæ gr. 1/10	1	—	100
,, Hyoscyamus Tincture, min. 10	1 to 4 or more	36	100
,, Hypodermic Products (*see pages* 201-206)			
,, Hypophosphites Compound, gr. 1-1/2 ... ... Each contains: Calcium, Potassium, Sodium, Manganese, Iron and Quinine Hypophosphites, with gr. 1/128 of Strychnine Hypophosphite: equivalent to fluid drachm 1/2 of standard Compound Syrup of Hypophosphites.	1 to 2	25	100
,, Hypophosphites Compound, gr. 3 ... ... Containing gr. 1/64 of Strychnine Hypophosphite: equivalent to fluid drachm 1 of standard Compound Syrup.	1	25	100

Write the Brand in full, thus: ℞ Tabloid — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Hypophosphites Compound and Creosote	1	—	100
Each contains: Creosote, min. 1, and gr. 3 of the combined Hypophosphites of Calcium, Sodium, Potassium, Manganese, Iron and Quinine, with gr. 1/64 of Strychnine Hypophosphite: equivalent to fluid drachm 1 of standard Compound Syrup of Hypophosphites.			
I			
,, Ichthyol, gr. 2-1/2	1 to 4	25	100
,, Ipecacuanha Powder, gr. 1/10	1 frequently	100	—
,, ,, ,, gr. 5 ...	1 every hour	—	100
,, Ipecacuanha deprived of its Emetic Principles, gr. 5 ...	1 to 4 or more	—	100
,, Ipecacuanha and Tartarated Antimony, of each, gr. 1/100	1 frequently	—	100
,, Ipecacuanha Wine, min. 5 ...	1 to 3 (*expectorant*)	50	100
,, Ipecacuanha with Opium (*see* Dover Powder, *page* 241)			
,, Ipecacuanha with Squill (B.P. Pill), gr. 4	1 to 2	—	100
Each contains approximately: Ipecacuanha and Opium, of each, gr. 1/5, Powdered Squill and Powdered Ammoniacum, of each, gr. 2/3.			
,, Iridin Compound	1 to 2	25	100
℞ Iridini ... ... gr. 2 Ext. Hyoscyami Vir. gr. 1/2 Pil. Rhei Comp. ... gr. 1-1/2			
,, Iron Carbonate, Saccharated, gr. 5	1 to 6	—	100
,, Iron Glycerophosphate, gr. 3	1 to 2	25	100
,, Iron and Quinine Citrate, B.P., gr. 3	1 to 3	25	100
,, Iron, Reduced (*see* Reduced Iron)			
,, Iron Sulphate, Dried, gr. 3...	1	—	100

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Iron Valerianate, gr. 1 ...	1 or more	—	100
,, Iron and Strychnine Phosphates ... ... ℞ Ferri Phosphatis Sol. gr. 1 Strychninæ Phosphatis gr. 1/32	1	25	100
,, Iron, Arsenic and Digitalin ... ℞ Ferri Phosphatis Sol. gr. 3 Acidi Arseniosi ... gr. 1/100 Digitalini (Amorph.) gr. 1/100	1 to 3	25	100
,, Iron and Arsenic Compound ℞ Ferri Hypophosphitis gr. 2 Quininæ Sulphatis ... gr. 1 Acidi Arseniosi ... gr. 1/50 Strychninæ Sulphatis gr. 1/50 Tonic, stimulant, hæmatinic and alterative.	1 to 3	—	100
,, Iron Citrate Compound ... ℞ Ferri et Ammon. Cit. gr. 3 Quininæ Sulphatis ... gr. 1 Acidi Arseniosi ... gr. 1/60	1 to 3	25	100
,, Iron Phosphate with Quinine and Strychnine (*see* Easton Syrup, *page* 241)			
,, Iron Pill (*see* Blaud, *page* 235)			

J

,, Jalap, gr. 5	1 to 4	—	100
,, Juniper Oil, min. 3 (Capsule), boxes of 50	1	—	—

K

,, Kino Compound Powder, B.P., gr. 5 ... ... Each contains: Kino, gr. 3-3/4; Opium, gr. 1/4; and Cinnamon, gr. 1.	1 to 4	—	100
,, Kissingen Salt, Effervescent, Artificial, tubes of 25	1 or more as required	—	—

L

,, Laudanum (*see* Opium Tincture, B.P., *page* 252)

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products *continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	Issued in bots. of
,, Laxative Vegetable ... R Ext. Colocynth. Co. gr. 1 Ext. Jalapæ .. gr. 1/2 Podophylli Resinæ gr. 1/4 Leptandrini... .. gr. 1/2 Ext. Hyoscyami Vir. gr. 1/4 Ext. Taraxaci ... gr. 1/4 Ol. Menthæ Pip. ... *q.s.* A purely vegetable laxative and cholagogue prepared with drugs of exceptional purity.	1 to 3	25	100
,, Lead with Opium (B.P. Pill), gr. 4... ... ... Each contains approximately: Lead Acetate, gr. 3; and Opium, gr. 1/2.	1	—	100
,, Liquorice Compound Powder, gr. 30 ... ... Each represents: Senna, gr. 5; Liquorice Root, gr. 5; and Sublimed Sulphur, gr. 2-1/2; etc.	1 to 4	25	100
,, Lithium Carbonate, gr. 2 ...	1 to 3	—	100
,, Lithium Citrate, gr. 5, *Effervescent*, bottles of 25 ...	1 to 2	—	100
,, Lithium Citrate, Effervescent, B.P., gr. 60, tubes of 25 ...	1 to 2	—	—
,, Lithium Citrate and Sodium Sulphate, Effervescent, tubes of 25... ... ... R Lithii Citratis ... gr. 5 Sodii Sulphatis ... gr. 30	1 to 2	—	—
,, Lithium Benzoate Compound R Lithii Benzoatis ... gr. 3 Sulphuris Præcip. ... gr. 2 Quininæ Salicylatis gr. 1/3	1 to 4 or more	—	100
Livingstone Rouser (*see* Quinine and Rhubarb Compound, *page* 256)			
,, 'Lodal' (*Trade Mark*) (6:7-Dimethoxy-2-methyl-3:4-dihydro*iso*quinolinium Chloride), gr. 1	1	25	100

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	bots. of
M			
,, Magenta Dye, Aniline, gr. 30, tubes of 12		—	—
,, Magnesium Citrate (*True*), Effervescent, gr. 60, tubes of 25	1 to 3	—	—
,, Magnesium Sulphate, Effervescent, B.P., gr. 60, tubes of 25	1 to 4	—	—
Each represents gr. 30 of Magnesium Sulphate.			
,, Magnesium Sulphite, gr. 5 ...	1 frequently	—	100
,, Magnesium Carbonate Compound	1 to 4	25	100
℞ Magnesii Carbonatis gr. 3 Potass. Bicarbonatis gr. 3 Sodii Bicarbonatis... gr. 3			
,, Magnesium Sulphate Compound, Effervescent, tubes of 25	1 to 4	—	—
℞ Magnesii Sulphatis gr. 15 Sodii Sulphatis ... gr. 15 Magnesii Carbonatis gr. 5 Liq. Zingiberis ... min. 3-1/2			
,, 'Mamos' (*Trade Mark*) (*formerly known as* 'Tabloid' Mammary Gland), gr. 5 ...	1 increased	—	100
,, Manganese Citrate (*soluble*), gr. 3...	1 to 3	25	—
,, Manganese Citrate (*soluble*), gr. 5...	1 to 2	25	—
,, Manganese and Iron Citrate (*soluble*), gr. 3	1 to 3	25	100
,, Manganese and Iron Citrate (*soluble*), gr. 5	1 to 2	25	100
,, Manganese Peroxide, gr. 2 ...	1 to 5	25	100
,, Medulla (*see* Bone Medulla, *page* 236)			

B.P. OR BETTER

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Menthol, gr. 1/4, bottles of 40	1 repeated	—	100
,, Menthol Compound	1 to 4	—	100
℞ Menthol ... .. gr. 1/2 Sodii Bicarbonatis... gr. 3 Saccharini ... ... gr. 1/6 Prepared with Menthol of exceptional quality.			
,, Mercuric Potassium Iodide, (*formerly known as* Iodic-Hydrarg.), gr. 1/6	1	—	100
,, Mercury preparations, 'Tabloid' Brand (*see* under Calomel, Grey Powder and Hydrargyrum)			
,, Methylene Blue, gr. 2 ...	1 to 2	—	100
,, Milk Sugar, gr. 3		—	100
,, Mineral Water Salts, *Effervescent, Artificial* (*see* Carlsbad, Kissingen, Seltzer and Vichy)			
,, Mistura Alba	1 to 8	—	100
℞ Magnesii Carb. Pond. gr. 2-1/2 Magnesii Sulphatis gr. 15 Ol. Menthæ Pip. min. 1/32 Conveniently presents a most efficient saline combination.			
,, Morphine Hydrochloride, 0·01 gm. [gr. 1/6]	1 to 2	100	—
,, Morphine Sulphate, gr. 1/20	1 to 4 or more	50	—
,, ,, ,, gr. 1/8	1 to 4	50	—
,, ,, ,, gr. 1/4	1 to 2	50	—
,, Morphine and Emetine, bottles of 50	1	—	—
℞ Morphinæ Sulphatis gr. 1/40 Emetinæ Hydrobrom. gr. 1/80			
,, Morphine, Strychnine and Belladonna	1 as required	25	100
℞ Morphinæ Sulphatis gr. 1/12 Strychninæ Sulphatis gr. 1/60 Ext. Belladonnæ ... gr. 1/20			

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	Issued in bots. of
,, Mucin Compound	2 or more	25	100
℞ Mucini .. gr. 5 Sodii Bicarbonatis... gr. 5			
N			
,, Nitroglycerin (*see* Trinitrin, *page* 262)			
,, Nuclein, gr. 1	1 or more	—	100
,, Nux Vomica Compound ...	1 to 3	25	100
℞ Ext. Nucis Vomicæ, Aloini, Ferri Sulphatis, Pulv. Myrrhæ, Pulv. Saponis āā gr. 1/2 Stomachic and tonic aperient, of special value in chronic constipation.			
,, Nux Vomica Tincture, min. 1	1 frequently	100	—
,, ,, ,, ,, min. 5	1 to 3	48	100
,, ,, ,, ,, min. 10	1	36	100
O			
,, Ophthalmic Products (*see pages* 210-211)			
,, Opium, gr. 1/2	1 to 4	—	100
,, ,, gr. 1	1 to 2	—	100
,, Opium Tincture, B.P. (Laudanum), min. 2	1 to 5	48	100
,, Opium Tincture, B.P. (Laudanum), min. 5	1 to 3	48	100
,, Opium Tincture, B.P. (Laudanum), min. 10	1	36	100
,, Ovarian Substance (*see* 'Varium,' *page* 263)			
,, Ox Bile (Purified), gr. 4 ...	1 to 4	—	100
P			
,, Pancreatin (*see* 'Pepana,' *page* 253)			

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—continued

'TABLOID' BRAND	DOSE	Issued in oval bots. of	Issued in bots. of
,, Papain, gr. 2	1 to 4	25	100
,, Paregoric (*see* Camphor, *page* 237)			
,, Pastilles (*see pages* 212, 213)			
,, Pelletierine Tannate, gr. 2 ...	1 to 4	25	—
,, 'Pepana' (*Trade Mark*) ... ℞ Pepsini ... ... gr. 1 Pancreatini ... ... gr. 1 Calcii Lactophosphatis... gr. 1 Scientifically prepared for the treatment of dyspeptic conditions affecting both stomach and intestine.	1 to 3	25	100
,, Pepsin, Saccharated, gr. 5 ...	1 to 4 or more	—	100
,, Pepsin and Strychnine ... ℞ Pepsini ... . gr. 2 Strychninæ Sulphatis ... gr. 1/100	1 to 3	25	100
,, Pepsin, Bismuth and Charcoal ℞ Pepsini ... ... gr. 2 Bismuthi Carbonatis ... gr. 2 Carbonis Ligni ... ... gr. 2 Digestive, sedative and absorbent, of special service in flatulent dyspepsia.	1 to 3	25	100
,, Pepsin, Bismuth and Strychnine ... ... ℞ Pepsini ... ... gr. 2 Bismuthi Carbonatis ... gr. 3 Strychninæ Sulphatis ... gr. 1/100	1 to 3	25	100
,, Phenacetin, gr. 5	1 to 2	25	100
,, Phenacetin Compound ... ℞ Phenacetini ... ... gr. 4 Caffeinæ ... ... gr. 1	1 to 3	25	100
,, Phenacetin and Quinine Compound ... ... ℞ Phenacetini ... ... gr. 3 Quininæ Hydrobromidi gr. 1/2 Caffeinæ ... ... gr. 2/3	1 to 3	—	100
,, Phenazone (*see* Antipyrine, *page* 232)			
,, Phenol (*see* Carbolic Acid, *page* 238)			

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Phenol and Menthol Compound (Capsule), boxes of 25 ℞ Phenol ... ... gr. 1/4 Menthol ... . gr. 1/2 Ol. Cajuputi ... ... min. 1	1 as required	—	—
,, Phosphates Compound (*see* Chemical Food, *page* 239)			
,, Photographic (*see pages* 214-217)			
,, Pig Bile (Purified), gr. 4 ...	1 to 4	—	100
,, Pilocarpine Nitrate, gr. 1/10	1 to 5	25	—
,, ,, ,, gr. 1/4 ...	1 to 2	25	—
,, Piperazine, gr. 5, bottles of 25	1 to 2	—	—
,, Piperazine, gr. 5, *Effervescent*, tubes of 12	1 to 2	—	—
,, Pituitary Gland, gr. 2 ...	1 to 3	—	100
,, Plummer Pill (*see* Calomel Compound, *page* 237)			
,, Podophyllin, gr. 1/4	1 to 4	100	—
,, Podophyllin and Euonymin ... ℞ Podophylli Resinæ gr. 1/4 Ext. Euonymi Sicci gr. 1	1 to 2	—	100
,, Podophyllin Compound ... ℞ Podophylli Resinæ gr. 1/6 Pil. Rhei Comp. ... gr. 2-1/2 Ext. Hyoscyami Vir. gr. 1-1/4	1 to 3	—	100
,, Potassium Bicarbonate, gr. 5	1 to 6	40	100
,, Potassium Bromide, gr. 5 ...	1 to 6	—	100
,, ,, ,, gr. 10 ...	1 to 3	—	100
,, Potassium Chlorate, gr. 5 ... In graven white-metal boxes, each containing 40 or 100	1 as required	40	100
,, Potassium Chlorate and Borax In graven white-metal boxes, each containing 40 or 100	1 as required	40	100
,, Potassium Iodide, gr. 1 ...	1 frequently	—	100
,, ,, ,, gr. 3 ...	1 to 6	—	100
,, ,, ,, gr. 5 ...	1 to 4	—	100

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Potassium Nitrate (Sal Prunella), gr. 5...	1 to 4	—	100
,, Potassium Permanganate, gr. 1	1 to 3	—	100
,, ,, ,, gr. 2	1	—	100
,, Prostate Gland, gr. 2-1/2 ...	1 to 2	—	100
Q			
,, Quinine, Ammoniated (*see* Ammoniated Quinine)			
,, Quinine Bihydrochloride (Acid Quinine Hydrochlor.), gr. 2, gr. 3, gr. 5, gr. 10, each strength	as required	25	100
,, Quinine Bisulphate, gr. 1/2 ...	1 or more	50	100
,, ,, ,, gr. 1 ...	1 or more	36	100
,, ,, ,, gr. 2 ...	1 to 5	25	100
,, ,, ,, gr. 3 ...	1 to 3	25	100
,, ,, ,, gr. 4 ...	1 to 2	25	100
,, ,, ,, gr. 5 ...	1 to 2	25	100
,, ,, ,, gr. 10 ...	1	25	100
Proved by the experience of medical officers to retain its therapeutic activity under the most adverse climatic conditions.			
,, Quinine Hydrobromide, gr. 1, gr. 2, gr. 3, gr. 4, gr. 5, each strength	as required	25	100
,, Quinine Hydrochloride, gr. 1, gr. 2, gr. 3, gr. 4, gr. 5, each strength	as required	25	100
,, Quinine Salicylate (*Physiologically Pure*), gr. 1 ...	1 to 6	25	100
,, Quinine Salicylate (*Physiologically Pure*), gr. 3 ...	1 to 2	25	100
,, Quinine Salicylate (*Physiologically Pure*), gr. 5 ...	1 to 2	25	100

Write the Brand in full, thus: 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Quinine Sulphate, gr. 1, gr. 2, gr. 3, gr. 4, gr. 5, each strength	as required		
,, Quinine Valerianate, gr. 2 ...	1 to 2	—	100
,, Quinine Bisulphate and Potassium Citrate, Effervescent, tubes of 25 ... ... ℞ Quininæ Bisulphatis gr. 1 Potassii Citratis ... gr. 15	1 to 2, repeated as necessary	—	—
,, Quinine and Camphor ... ℞ Quininæ Bisulphatis gr. 1 Camphoræ ... ... gr. 1/5	1 every hour	25	100
,, Quinine and Strychnine ... ℞ Quininæ Bisulphatis gr. 1 Strychninæ Sulphatis gr. 1/60	1 to 3	25	100
,, Quinine, Arsenic and Strychnine ... ... ℞ Quininæ Bisulphatis gr. 1 Acidi Arseniosi ... gr. 1/20 Strychninæ ... ... gr. 1/30	1	—	100
,, Quinine, Belladonna and Camphor ... ... ℞ Quininæ Sulphatis gr. 1/4 Ext. Belladonnæ ... gr. 1/8 Camphoræ ... ... gr. 1/4	1 to 4	25	100
,, Quinine, Camphor and Aconite ℞ Quininæ Bisulphatis gr. 1/4 Camphoræ ... ... gr. 1/4 Tinct. Aconiti ... min. 1	1 every hour	25	100
,, Quinine Compound ... ... ℞ Cinchonæ Alkaloidorum gr. 1 Acetanilidi (Antifebrini), P.B. gr. 1-1/5 Campboræ Monobromatæ gr. 1/5 Pulv. Ipecacuanhæ gr. 1/8 Ext. Cascar. Sagrad. gr. 1/4	1 every hour	25	100
,, Quinine and Rhubarb Compound (*well known for many years as* 'Tabloid' Livingstone Rouser) ... ... ℞ Pulv. Jalapæ ... gr. 1-1/2 Hydrarg. Subchlor. gr. 1 Pulv. Rhei ... ... gr. 1-1/2 Quininæ Bisulphatis gr. 1	1 to 3	25	100

Write the Brand in full, thus: R 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	 bots. of
R			
,, Red Gum	1 occasionally	25	100
,, Reduced Iron, gr. 2	1 to 3	—	100
,, Reduced Iron Compound ..	1 to 2	25	100
℞ Ferri Redacti .. gr. 2 Ext. Hyoscyami ... gr. 1 Ext. Nucis Vomicæ gr. 1/2 Olei Carui .. ... min. 1/4			
,, Reduced Iron and Rhubarb Compound	1 to 2	25	100
℞ Ferri Redacti ... gr. 2 Ext. Hyoscyami ... gr. 1 Ext. Nucis Vomicæ gr. 1/2 Pil. Rhei Comp. ... gr. 1 Olei Carui ... ... min. 1/4 This preparation and 'Tabloid' Reduced Iron Compound are of special value in the treatment of neurasthenia, chlorosis and its sequelæ.			
,, Residuum Rubrum, gr. 5 ...	1 to 4	—	100
,, Resina Podophylli (*see* Podophyllin, *page* 254)			
,, Resorcin, gr. 3	1 to 2	—	100
,, Rhubarb, gr. 3	1 to 4 or more	25	100
,, Rhubarb Extract, gr. 2 ...	1 to 4	25	100
,, Rhubarb and Soda	1 to 5	25	100
℞ Pulv. Rhei ... ... gr. 3 Sodii Bicarbonatis... gr. 1-1/2 Pulv. Zingiberis ... gr. 1/2			
,, Rhubarb Compound Pill, B. P., gr. 4	1 to 2	25	100
,, Rhubarb Compound Powder (*see* Gregory Powder, *page* 244)			
,, Rhubarb and Gentian Compound (Stomachic Compound)	1 to 4	—	100
℞ Inf. Gentianæ Co. fl. dr. 2 Inf. Rhei ... ... fl. dr. 1 Sodii Bicarbonatis... gr. 5 Ol. Menthæ Pip. ... min. 1/6			

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products *continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	bots. of
,, Rhubarb, Soda and Magnesia ℞ Pulv. Rhei ... gr. 1 Sodii Bicarbonatis gr. 1-1/2 Magnesii Carb. Pond. gr. 2 Pulv. Zingiberis ... gr. 1/2	1 to 5	25	100
S			
,, Saccharin, gr. 1/2		100 & 200	500
,, Salicin, gr. 5	1 to 4	25	100
,, Salicylic Acid (*Physiologically Pure*), gr. 3	1 to 4 or more	--	100
,, Salicylic Acid (*Physiologically Pure*), gr. 5	1 to 4	---	100
,, Salol, gr. 5	1 to 3	25	100
,, Sandal Wood Oil, min. 5 (Capsule), boxes of 25 ...	1 to 3 or more	--	--
,, Sandal Wood Oil, min. 10 (Capsule), boxes of 20 ...	1 to 2	—	—
,, Santonin, gr. 1/2	1 to 4 or more	50	—
,, ,, gr. 1	1 to 4 or more	50	100
,, ,, gr. 2	1 to 3	50	—
,, ,, gr. 3	1 to 2	50	—
,, Santonin and Calomel ... ℞ Santonini ... ... gr. 1 Hydrarg. Subchlor. gr. 1	1 to 3	25	100
,, 'Saxin' *(Trade Mark)*, gr. 1/4, bottles of 200 and 500 ... Excels all sweetening agents in concentration and delicacy of flavour. About 600 times sweeter than sugar.	1 or more	—	100
,, Seltzer Salt, Effervescent, Artificial, tubes of 25 ...	1 or more as desired	—	—
,, Slippery Elm, bottles of 25 ... Each represents gr. 5 of the mucilage of Slippery Elm Bark.	1 or more	—	100
,, 'Soamin' *(Trade Mark)* (Sodium Para-aminophenyl-arsonate), gr. 1	*(See special*	—	100
,, ,, bottles of 25 gr. 3	*leaflet)*	—	—

Write the Brand in full, thus: 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	bots. of
.. Soda-Mint (*Neutralising*) ℞ Sodii Bicarbonatis.. gr. 4 Ammon. Bicarb. .. gr. 1/12 Ol. Menthae Pip. *q.s.* A most effective compound of antacid, aromatic and stimulating ingredients of exceptional purity.	1 to 4 or more	30	100
.. Sodium Bicarbonate, gr. 5 ...	1 to 6	40	100
.. „ „ gr. 10 ..	1 to 3	40	100
.. Sodium Bromide, gr. 5 ...	1 to 6		100
.. „ „ gr. 10 ...	1 to 3		100
.. Sodium Bromide Compound ℞ Sodii Bromidi ... gr. 2 Strontii Bromidi ... gr. 2 Ammonii Bromidi .. gr. 1 Sodii Arsenatis ... gr. 1/60	1 to 6		100
.. Sodium Citrate, gr. 2 ...	for milk modification	—	100
.. „ „ gr. 5 ...		25	100
.. Sodium Phosphate, Effervescent, B.P., gr. 60, tubes of 25 ... ... Each represents gr. 30 of Sodium Phosphate.	1 or more	—	—
.. Sodium Salicylate (*Natural*) gr. 3	1 to 6 or more	25	—
.. „ „ gr. 5	1 to 6	25	—
.. Sodium Salicylate (*Physiologically Pure*), gr. 3 ...	1 to 6 or more	25	100
.. Sodium Salicylate (*Physiologically Pure*), gr. 5 ...	1 to 6	25	100
.. Sodium Salicylate (*Physiologically Pure*), gr. 5, *Effervescent*, tubes of 25... ...	1 or more	—	—
.. Sodium Salicylate and Potassium Bicarbonate, of each, gr. 5	1 to 6	25	100
.. Sodium Sulphocarbolate, gr. 5	1 to 3	—	100
.. Sodium Sulphate, Effervescent, B.P., gr. 60, tubes of 25 ... Each represents gr. 30 of Sodium Sulphate.	1 or more	—	—

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	bots. of
,, Sodium Sulphate Compound, Effervescent, tubes of 20 ... ℞ Sodii Sulphatis Exsicc. gr. 30 Potassii Tartratis Acidi gr. 10 Potassii Bicarbonatis gr. 2-1/2 Ess. Zingiberis ... *q.s.* Salis Effervescentis *q.s.*	1 to 2		—
,, Sparteine Sulphate, gr. 1, bottles of 25	1	—	—
,, Spinal Cord Substance, gr. 2-1/2	1 or more	—	100
,, Spleen Substance, gr. 5 ...	1 or more	—	100
,, Strontium Bromide, gr. 5 ...	1 to 6	—	100
,, Strophanthus Tincture, B.P., min. 5 ... ... Unique in preserving the full therapeutic activity of the true drug.	1 repeated as necessary	50	100
,, Strychnine Sulphate, gr. 1/60	1 to 4	50	—
,, ,, ,, gr. 1/30	1 to 2	50	—
,, ,, ,, gr. 1/20	1	50	—
,, ,, ,, gr. 1/15	1	50	—
,, Sugar of Milk (*see* Milk Sugar, *page* 251)			
,, Sulphonal, gr. 5	1 to 6	25	100
,, Sulphur Compound ... ... ℞ Sulphuris Præcipitati gr. 5 Potassii Tartratis Acidi gr. 1	1 to 4 or more	25	100
,, Supra-renal Gland, gr. 5 ...	1 to 3	—	100
T			
,, Tannin, gr. 2-1/2	1 to 2	—	100
,, Tar, gr. 1	1 frequently	50	100
,, Tar and Codeine ... ... ℞ Picis Liquidæ ... gr. 1 Codeinæ ... ... gr. 1/8	1 to 4	25	100

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Tea (*see page* 264)			
,, Terebene, min. 5 (Capsule), boxes of 50	1 to 3	—	—
Test Products (*see pages* 228-230)			
,, Tetranitrin (*see* Erythrol Tetranitrate, *page* 242)			
,, Thirst Quencher ... ... Containing tartaric acid and sodium bicarbonate, flavoured with lemon and 'Saxin.'	1 to 2 or more as desired	25	100
,, Three Bromides, Effervescent, tubes of 25 ... ... ℞ Potassii Bromidi 0·4 gm. [gr. 6] Sodii Bromidi ... 0·4 gm. [gr. 6] Ammonii Bromidi 0·2 gm. [gr. 3] Salis Effervesc. *q.s.*	1 to 2	—	—
,, Three Syrups, 1 fl. dr. ... ℞ Syr. Ferri Phosphatis cum Quininâ et Strychninâ (Easton) ... ... min. 15 Syr. Hypophosphitum Comp. ... min. 15 Syr. Phosphatum Comp. (Parrish) min. 30 Each contains Strychnine, gr. 1/85	1 to 2	25	100
,, Three Valerianates ... ... ℞ Quininæ Valerianatis ... gr. 1 Ferri Valerianatis ... gr. 1 Zinci Valerianatis ... gr. 1 Retains the full therapeutic activity of the Valerianates, whilst concealing their unpleasant odour.	1	—	100
,, Thymol, gr. 1	1 to 2	25	—
,, ,, gr. 2	1	25	—
,, ,, gr. 5	Used in special cases	—	100
,, Thymus Gland, gr. 5 ...	1 to 5	—	100
,, Thyroid Colloid, gr. 1/2 ...	1 increased	—	100

Write the Brand in full, thus: 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	Issued in bots. of
,, Thyroid Gland (*Standardised*), gr. 1/10	1 increased		100
,, ,, ,, ,, gr. 1/4	1 increased		100
,, ,, ,, ,, gr. 1/2	1 increased		100
,, ,, ,, ,, gr. 1	1 increased		100
,, ,, ,, ,, gr. 1-1/2	1 increased		100
,, ,, ,, ,, gr. 2-1/2	1 increased		100
,, ,, ,, ,, gr. 5 ...	1		100
The most successful Thyroid preparation, standardised so that the desiccated gland substance contains not less than 0·2 per cent. of Iodine, in organic combination.			
,, Tinctures—			
(*See* Aconite, Belladonna, Camphor Compound, Cannabis Indica, Capsicum, Cinchona, Cinchona Compound, Digitalis, Gelsemium, Ginger, Hyoscyamus, Nux Vomica, Opium, Strophanthus and Warburg)			
,, Tonic Compound	1 to 3	25	100
℞ Ferri Pyrophosphatis... gr. 2 Quininæ Bisulphatis gr. 1 Strychninæ Sulphatis... gr. 1/100			
,, Trinitrin (Nitroglycerin), gr. 1/200	1 or more	25	100
,, ,, ,, gr. 1/100	1 to 2	25	100
,, ,, ,, gr. 1/50	1	25	100
One of the many important therapeutic agents in the introduction of which B. W. & Co. were pioneers.			
,, Trinitrin Compound	1 to 2	25	100
℞ Trinitrini ... ... gr. 1/100 Capsicini ... ... gr. 1/200 Menthol ... .. gr. 1/100			
,, Trional, gr. 5...	1 to 6	25	100
,, Turpentine Oil, Rectified, min. 10 (Capsule), boxes of 20 ...	1 or more	—	—

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND	DOSE	Issued in oval bots. of	 bots. of
U			
,, Urotropine, gr. 3	1 to 5	25	100
,, ,, gr. 5	1 to 3	25	100
V			
,, 'Varium' (*Trade Mark*) (*formerly known as* 'Tabloid' Ovarian Substance), gr. 5 ...	1 to 2 or more	—	100
,, Vegetable Laxative (*see* Laxative Vegetable)			
,, Veronal, gr. 5	1 to 2	25	—
,, Viburnum Prunifolium Extract, gr. 2	1 to 5	—	100
,, Vichy Salt, Effervescent, Artificial, tubes of 25 ...	1 or more as desired	—	—
,, Vichy Salt, Effervescent, Artificial, and Lithium Citrate, tubes of 25 ... ... Each contains Lithium Citrate, gr. 1, in addition to the essential constituents of Vichy Water.	1 or more as desired	—	—
,, Vinum Ipecacuanhæ (*see* Ipecacuanha Wine, *page* 247)			
,, Violet Dye, Aniline, gr. 30, tubes of 12		—	—
W			
,, Warburg Tincture, min. 30 ...	2 to 8	—	100
,, ,, ,, dr. 2 ...	1 to 2	25	100
Z			
,, Zinc Oxide, gr. 2	1 to 5	—	100
Zinc Sulphate (*see* 'Soloid' Brand Products, *page* 228)			
,, Zinc Valerianate, gr. 2 ...	1	—	100

Write the Brand in full, thus : Bd 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND —	DOSE	Issued in oval bots. of	Issued in bots. of
,, Zinc Valerianate Compound	1	—	100
℞ Zinci Valerianatis . . gr. 1 Pulv. Rhei . . gr. 1 Ext. Belladonnæ .. gr. 1/8 Pulv. Zingiberis ... gr. 1			
,, Zinc Valerianate and Asafetida Compound	1	—	100
℞ Zinci Valerianatis ... gr. 1 Asafetidæ ... ... gr. 1 Myrrhæ ... ... gr. 1/2			
,, Zinc Valerianate with Iron and Arsenic	1	—	100
℞ Zinci Valerianatis ... gr. 2 Ferri Redacti ... gr. 1 Acidi Arseniosi ... gr. 1/60 Ext. Gentianæ ... gr. 1			
,, Zingib. Fort. Tinct., P.B., 1885 (*see* Ginger, *page* 243)			

Also a wide range of other products issued under the 'Tabloid' Brand.

'Tabloid' Brand Tea provides the most convenient, portable and effective means of quickly preparing tea of uniform strength. It is the most suitable tea for travellers, sportsmen, cyclists, pleasure parties, etc., and is an admirable adjunct to the home. A tin of 'Tabloid' Tea and a bottle of 'Tabloid' 'Saxin' for sweetening the infusion may be conveniently carried in the waistcoat-pocket.

In enamelled tins containing 100 and 200.

'Tabloid' Brand Tea, Special Blend, an unique blend of the very choicest varieties.

In enamelled tins containing 100 and 200.

Terebene, Pure (B. W. & Co.)—	DOSE
In bottles of 1, 2 and 16 ounces	5 to 15 min.

Test Cases, 'Soloid' Brand *(see* Analysis Cases, *pages* 175-177*)*

Tinctures, B.P. *(Physiologically standardised),* **'Wellcome' Brand** (*see page* 299)

B.R. OR BETTER

Tow, Carbolised, Pleated Compressed, 'Tabloid' Brand *(see* Dressings, *page* 193*)*

Towels, Sanitary, Pleated Compressed, 'Tabloid' Brand *(see page* 218*)*

TUBERCULINS, TRADE MARK 'WELLCOME' BRAND

The word 'WELLCOME' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'WELLCOME' Brand TUBERCULINS, prepared in the Wellcome Physiological Research Laboratories, Brockwell Hall, London (Eng.), are carefully tested for sterility before issue.

New Tuberculin (W) is prepared by a special process, designed to render absorption of the bacillary substance more easy by removal of lipoid constituents.

Burroughs Wellcome & Co. act as distributing agents for the Wellcome Physiological Research Laboratories.

Issued in rubber-corked bottles, for dilution by the user

Endotoxic—

'WELLCOME' BRAND—

,, **New Tuberculin (W), Human**

1 c.c.	containing 2 mgm.	tubercle bacillary substance
5 c.c.	,, 10 mgm.	,, ,, ,,

,, **New Tuberculin (W), Bovine**

1 c.c.	containing 2 mgm.	tubercle bacillary substance
5 c.c.	,, 10 mgm.	,, ,, ,,

,, **Tubercle Vaccine, Human—Bacillary Emulsion (B.E.)**

1 c.c.	containing 5 mgm.	tubercle bacillary substance
5 c.c.	,, 25 mgm.	,, ,, ,,

,, **Tubercle Vaccine, Bovine—Bacillary Emulsion (P.B.E.)**

1 c.c.	containing 5 mgm.	tubercle bacillary substance
5 c.c.	,, 25 mgm.	,, ,, ,,

Tuberculins, 'Wellcome' Brand—*continued*

Exotoxic

'WELLCOME' BRAND—

,, **Old Tuberculin, Human (T.)**

1 c.c. of undiluted Old Tuberculin, Human
5 c.c. ,, ,, ,, ,,

,, **Old Tuberculin, Bovine (P.T.)**

1 c.c. of undiluted Old Tuberculin, Bovine
5 c.c. ,, ,, ,, ,,

,, **Tuberculin Bouillon Filtrate, Human (T.O.A.)**

1 c.c. of undiluted T.O.A.
5 c.c. ,, ,,

,, **Tuberculin Bouillon Filtrate, Bovine (P.T.O.)**

1 c.c. of undiluted P.T.O.
5 c.c. ,, ,,

For Diagnosis only—

Tuberculin (Human), B. W. & Co.—

For Calmette's Ophthalmic Reaction

Hermetically-sealed tubes containing a sterile solution of a strength of 10 mgm. of dried purified tuberculin per c.c. In boxes of 6 tubes.

Tuberculin (Bovine), B. W. & Co.—

For Calmette's Ophthalmic Reaction

Hermetically-sealed tubes containing a sterile solution of a strength of 10 mgm. of dried purified tuberculin per c.c. In boxes of 6 tubes.

Tuberculin (Human), B. W. & Co.—

For von Pirquet's Cutaneous Reaction

In boxes of 6 hermetically-sealed tubes.

Tuberculin (Bovine), B. W. & Co.—

For von Pirquet's Cutaneous Reaction

In boxes of 6 hermetically-sealed tubes.

For Veterinary Diagnosis—

'WELLCOME' BRAND—

,, **Tuberculin**— *For Veterinary Diagnosis*

In phials of 4 c.c. and in corked bottles of 30 c.c.

Tuberculins, 'Wellcome' Brand—*continued*

For Laboratory Tests

'WELLCOME' BRAND—

,, **Tubercle Bacilli (Human),** *killed*—
For Opsonic Estimations
Issued as a thick emulsion, in tubes.

,, **Tubercle Bacilli (Bovine),** *killed*—
For Opsonic Estimations
Issued as a thick emulsion, in tubes.

,, **Tubercle Bacilli (Human),** *killed and finely ground*—
For Agglutination Tests
Issued as a dry powder, in tubes.

,, **Tubercle Bacilli (Bovine),** *killed and finely ground*—
For Agglutination Tests
Issued as a dry powder, in tubes.

VACCINES, TRADE MARK 'WELLCOME' BRAND

The word 'WELLCOME' is a brand which designates fine products issued by Burroughs Wellcome & Co.

'WELLCOME' Brand VACCINES are prepared in the Wellcome Physiological Research Laboratories, Brockwell Hall, London (Eng.). Every stage of their preparation is carried out under the immediate supervision of a skilled staff of highly-qualified experts.

Burroughs Wellcome & Co. act as distributing agents for the Wellcome Physiological Research Laboratories.

Vaccines should be kept in a cool dark place, and protected from extremes of temperature.

Issued in hermetically-sealed phials

'WELLCOME' BRAND—

,, **Acne Bacillus Vaccine**
1 c.c. containing 10 million organisms
1 c.c. ,, 50 ,, ,,

,, **Acne Vaccine, Mixed, No. 1**
1 c.c. containing 10 million acne bacilli and 250 million staphylococci, mixed

,, **Acne Vaccine, Mixed, No. 2**
1 c.c. containing 125 million acne bacilli and 125 million staphylococci, mixed

,, **Acne Vaccine, Mixed, No. 3**
1 c.c. containing 500 million acne bacilli and 500 million staphylococci, mixed

Vaccines, 'Wellcome' Brand—*continued*

'WELLCOME' BRAND—

,, B. Coli Vaccine

1 c.c. containing 10 million organisms
1 c.c. ,, 50 ,, ,,

,, Cholera Vaccine

1 c.c. containing 1000 million organisms
1 c.c. ,, 2000 ,, ,,

,, Coryza Vaccine, No. 1

1 c.c. containing 100 million *B. septus*

,, Coryza Vaccine, No. 2

1 c.c. containing 100 million *M. catarrhalis*

,, Coryza Vaccine, No. 3

1 c.c. containing 100 million *B. septus* and 100 million *M. catarrhalis*

,, Gonococcus Vaccine

1 c.c. containing 5 million organisms
1 c.c. ,, 20 ,, ,,
1 c.c. ,, 200 ,, ,,
1 c.c. ,, 1000 ,, ,,

,, Influenza Vaccine

1 c.c. containing 10 million *B. influenzæ*
1 c.c. ,, 50 ,, ,, ,,

,, Mediterranean Fever Vaccine

1 c.c. containing 100 million organisms

,, Pneumococcus Vaccine

1 c.c. containing 10 million organisms
1 c.c. ,, 50 ,, ,,

,, Staphylococcus Vaccine, Aureus

1 c.c. containing 200 million organisms
1 c.c. ,, 1000 ,, ,,

,, Staphylococcus Vaccine, Mixed

1 c.c. containing 200 million organisms
1 c.c. ,, 1000 ,, ,,

,, Streptococcus Vaccine, Dental

1 c.c. containing 10 million organisms
1 c.c. ,, 50 ,, ,,

Vaccines, 'Wellcome' Brand *continued*

'**WELLCOME**' BRAND—

,, **Streptococcus Vaccine, Polyvalent**

1 c.c. containing 10 million organisms
1 c.c. ,, 50 ,, ,,

,, **Streptococcus Vaccine, Rheumatic Fever**

1 c.c. containing 10 million organisms
1 c.c. ,, 50 ,, ,,

,, **Typhoid Vaccine**

1 c.c. containing 500 million organisms
1 c.c. ,, 1000 ,, ,,
1 c.c. ,, 2000 ,, ,,

,, **Mallein,** *see page* 209

TRADE MARK 'VALOID' BRAND PRODUCTS

The word 'VALOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

'**VALOID**' BRAND—

	DOSE
,, Aromatic Cascara Sagrada, bottles containing 4 fl. oz.	10 to 60 min.
,, Ergot, bottles containing 4 fl. oz.	10 to 30 min.

The strength of each 'Valoid' preparation is indicated on the label

Various other products are also issued under this brand

TRADE MARK 'VALULE' BRAND PRODUCTS

The word 'VALULE' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

'**VALULE**' BRAND—	DOSE
,, Bone Medulla, flexible capsules, each representing gr. 5, bottles of 100	1 or more

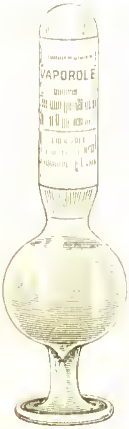
(*See also* 'Tabloid' Bone Medulla, *page* 236)

Various other products are also issued under this brand

'**VANA**' *(Trade Mark)* **Brand Tonic Wine**—	DOSE
Presents calcium glycerophosphate and the alkaloids of cinchona bark in a pure, sound wine of excellent quality.	
Bottles of 16 fl. oz.	Half a wineglassful

TRADE MARK 'VAPOROLE' BRAND PRODUCTS

The word 'VAPOROLE' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.



'Vaporole' container

'VAPOROLE' products present medicaments for hypodermic injection, inhalation, etc. Medicaments intended for hypodermic injection are issued in hermetically-sealed containers of special design, whilst those intended for inhalation are contained in thin glass capsules surrounded with absorbent material and enclosed in silken netting.

For Hypodermic Injection

Issued in hermetically-sealed containers

The 'Vaporole' container is unique in construction and convenience. It has an expanded base and will stand firmly on any flat surface. The container can be opened with ease and certainty by making a file mark on the neck with the file provided for the purpose, and snapping the neck at the file mark. Except when otherwise stated, the contents of each 'Vaporole' hypodermic product are sufficient to enable 1 c.c. (approx. min. 16) to be injected. Each product is **sterilised and ready for immediate hypodermic injection.**

'VAPOROLE' BRAND—

,, Apomorphine Hydrochloride, 0·005 gm. (gr. 1/13), boxes of 10.

,, Atropine Sulphate, 0·0005 gm. (gr. 1/130), boxes of 10.

,, Caffeine Sodio-benzoate, 0·25 gm. (gr. 3-3/4), boxes of 10.

,, Calomel, 0·05 gm. (gr. 3/4), in a Neutral Fatty Basis, with Creosote and Camphor, boxes of 10.

,, Camphor, 0·1 gm. (gr. 1-1/2), in Olive Oil, boxes of 10.

,, Cocaine Hydrochloride, 0·01 gm. (gr. 1/6) and 0·02 gm. (gr. 1/3), boxes of 10.

,, Digitalin (Crystalline), 0·0001 gm. (gr. 1/650), boxes of 10.

,, Emetine Hydrochloride, 0·02 gm. (gr. 1/3) and 0·03 gm. (gr. 1/2), boxes of 10.

'Vaporole' Brand Products *continued*

'VAPOROLE' BRAND—

,, 'Epicaine' ('Epinine' and Cocaine Hydrochloride). (*Trade Mark*) boxes of 10

℞ 'Epinine' ... ... 0·0003 gm. (gr. 1/216)
Cocainæ Hydrochloridi 0·02 gm. (gr. 1/3)
Aquam .. ... ad 1 c.c.
The above formula is equivalent to 'Epinine,' gr. 1/365, and Cocaine Hydrochloride, gr. 2/11, in each min. 10.

,, 'Epinine' (*Trade Mark*), 1 in 100, boxes of 10.

,, 'Ernutin' (*Trade Mark*), min. 10 (0·592 c.c.), boxes of 6.

,, Eucaine Lactate, 0·01 gm. (gr. 1/6), boxes of 10.

,, Grey Oil. Containing Mercury, 0·1 gm. (gr. 1-1/2), in a Neutral Fatty Basis, boxes of 10.

,, Hyoscine Hydrobromide, 0·0005 gm. (gr. 1/130), boxes of 10.

,, Iron and Arsenic, boxes of 10.

℞ Ferri Citratis Viridis ... 0·05 gm. (gr. 3/4)
Sodii Arsenatis ... ... 0·002 gm. (gr. 1/32)
Aquam ... ... ad 1 c.c.

,, Morphine Hydrochloride, 0·01 gm. (gr. 1/6) and 0·02 gm. (gr. 1/3), boxes of 10.

,, Pituitary (Infundibular) Extract, 0·5 c.c. and 1 c.c. of Sterile Extract, boxes of 6.

,, Quinine Bihydrochloride, 0·2 gm. (gr. 3) and 0·4 gm. (gr. 6), boxes of 10.

,, Strychnine Sulphate, 0·001 gm. (gr. 1/65) and 0·002 gm. (gr. 1/32), boxes of 10.

For Inhalation

Thin glass capsules surrounded with absorbent material and enclosed in silken netting.

,, Amyl Nitrite, min. 3 (0·178 c.c.) and min. 5 (0·296 c.c.), boxes of 12

,, Aromatic Ammonia, *for use as "Smelling Salts,"* boxes of 12.

,, Chloroform and Ethyl Iodide Compound, boxes of 6.

℞ Chloroformi ... .. min. 10 (0·592 c.c.)
Ethyl Iodidi ... ... min. 5 (0·296 c.c.)
Menthol ... ... gr. 1/8 (0·008 gm.)

'Vaporole' Brand Ammonium Chloride Inhaler

Delivers perfectly neutral fumes of pure ammonium chloride. A model of compactness, convenience and utility.

'VAPOROLE' ACID AND ALKALI, for use in the above Inhaler, are supplied in boxes of 12 products.

Nasal Attachment for use with above Inhaler.

Various other products are also issued under this brand

Veterinary Hypodermic Products, 'Tabloid' Brand
(See B. W. & Co.'s Price List)

Veterinary Ophthalmic Products, 'Tabloid' and 'Soloid' Brands *(See B. W. & Co.'s Price List)*

Vulcanite Nozzles—Curved or Straight.

To screw on collapsible tubes of 'Hazeline' Cream, when it is desired to apply this preparation to the mucous membranes of the nose, ear, urethra or rectum.

Water Analysis, A Simple Method of (7th Edition)

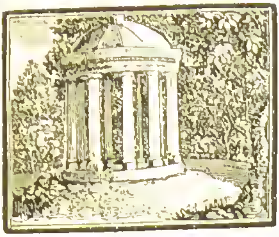
By J. C. Thresh, M.D., D.Sc., etc.

This standard text-book affords all the information necessary to enable those with only a small knowledge of analysis to perform a chemical examination of a sample of drinking-water by means of 'Soloid' Brand Water Analysis Cases. A chapter on the examination of sewage effluents is included.

Water Analysis Cases, 'Soloid' Brand *(see page* 175*)*

'Wellcome' Brand Products *(see pages* 273–300*)*

Verbal Instructions are not safe. To prevent fraud, it is best to write prescriptions for original bottles. . .



TRADE MARK 'WELLCOME' BRAND PRODUCTS

The word 'WELLCOME' is a trade mark or brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

IN 'WELLCOME' Brand PRODUCTS, the object is to establish a series of Chemicals and Galenicals whose use will enable the physician to administer to the patient the precise dose of operative medicinal substance desired. A first principle in their production is, therefore, the elimination of factors of variability and of their contributory causes. In the case of galenicals it was felt that control should begin, *ab initio*, with the plants as grown. With a view to securing and maintaining a supply of crude drugs of sufficiently high standards of quality, the 'Wellcome' Materia Medica Farm was, therefore, established, on which the raw material might be produced. This, at a stroke, abolished wide variations consequent upon the vagaries of collectors, and secured a vast advantage in uniformity of crop. Further, by experimental research and the propagation and scientific culture of selected varieties, together with control of site, soil, fertilisers and so forth, uniform yield in content was aimed at. Accurate standardisation of 'Wellcome' Brand Galenicals is assured by chemical tests, or where such tests are inapplicable, by physiological methods. In addition, they are standardised, wherever possible, according to the amount of active principle, and not of total alkaloids.

Elimination of variants

In the case of chemicals, existing official standards have been revised, and 'Wellcome' Chemicals are required to conform to standards of extreme stringency, the outcome of long experience and extensive research. Particular attention has been devoted to the preparation of fine alkaloids and the standards adopted are in very many instances higher than those of the British Pharmacopœia.

Standards of stringency

In all 'Wellcome' Brand Products exceptional purity is secured by excellence of raw materials and by the exercise of scrupulous care in all processes of preparation, in every stage from raw material to perfected product; while the drastic

'Wellcome' Brand Products—*continued*

nature of the tests and controls imposes a high degree of potency and uniformity of content. 'Wellcome' Standards are being continually revised to accord with the latest research and investigation.

'WELLCOME' BRAND—

,, Aconitine *(Pure Alkaloid)*, B.P.

The pure crystallised alkaloid from *Aconitum napellus*, free from pseudaconitine and japaconitine, and from the non-toxic aconine and benzaconine. Owing to its extremely poisonous properties, aconitine should be prescribed and dispensed with the utmost caution.

Dose—gr. 1/640 to gr. 1/400 (0·0001 gm. to 0·00016 gm.)

Tubes of gr. 5 (0·3 *gm.*)

,, Aconitine Hydrobromide

The most suitable salt of aconitine for therapeutic use. It is readily soluble in water, perfectly stable, and of uniform composition. The remarks as to purity and dosage of the alkaloid apply also to this salt.

Dose—gr. 1/640 to gr. 1/400 (0·0001 gm. to 0·00016 gm.)

Tubes of gr. 5 (0·3 *gm.*)

,, Aloin, B.P.

Free from resin. Lighter in colour and affords a clearer solution than the usual commercial article.

Dose—gr. 1/2 to gr. 2 (0·03 gm. to 0·13 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Aloin, B.P., Crystal

Well-defined crystals. Free from resin.

Dose—gr. 1/2 to gr. 2 (0·03 gm. to 0·13 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Apomorphine Hydrochloride, B.P.

This is the pure salt, the melting point of which is 295°–300°C.,—not 276° as usually stated.

Dose—Hypodermically, gr. 1/20 to gr. 1/10 (0·0032 gm. to 0·0065 gm.)
Orally, gr. 1/10 to gr. 1/4 (0·0065 gm. to 0·015 gm.)

Bottles of 1 *gramme and* 5 *grammes.*

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Atropine *(Pure Alkaloid)*, B.P.

Free from hyoscyamine and hyoscine.

DOSE—gr. 1/200 to gr. 1/100 (0·0003 gm. to 0·0006 gm.)

Bottles of gr. 60 (3·9 *gm.*), *oz.* 1/4 (7 *gm.*) *and oz.* 1 (28·3 *gm.*)

,, Atropine Sulphate, B.P.

Prepared from pure atropine.

DOSE—gr. 1/200 to gr. 1/100 (0·0003 gm. to 0·0006 gm.)

Bottles of gr. 60 (3·9 *gm.*), *oz.* 1/4 (7 *gm.*) *and oz.* 1 (28·3 *gm.*)

,, Berberine Sulphate

The salt of an alkaloid obtained from *Hydrastis canadensis.*

DOSE—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Bismuth and Iron Citrate *(Soluble)*

In yellowish-green scales, readily soluble in water. The Bismuth and Iron Citrates are so combined as to represent as nearly as possible equal parts by weight of their respective anhydrous salts.

DOSE—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Bismuth and Lithium Citrate *(Soluble)*

In handsome, colourless scales, readily soluble in water. Is indicated when the joint therapeutic effects of lithium and bismuth are desired. The proportion of lithium, in combination, corresponds to 25–30 per cent., by weight, of anhydrous lithium citrate.

DOSE—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Bismuth Carbonate, B.P.

DOSE—gr. 5 to gr. 20 (0·3 gm. to 1·3 gm.)

Cartons of oz. 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Bismuth Citrate

Practically free from nitrate (containing less than 0·05 per cent. of N_2O_5). Renders a clear solution with ammonia, and may be used for preparing the official Liquor Bismuthi, P.B.

DOSE—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)

Bottles of oz. 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Bismuth Oxychloride

This salt is presented as an exceptionally light and fine powder, making it suitable for use for toilet purposes.

DOSE—gr. 5 to gr. 20 (0·3 gm. to 1·3 gm.)

Bottles of oz. 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Bismuth Salicylate *(Physiologically Pure)*

This preparation contains the proper proportion of bismuth combined with pure salicylic acid, and is uniform in composition.

DOSE—gr. 5 to gr. 20 (0·3 gm. to 1·3 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Bismuth Subgallate

This is in a state of very fine powder—a condition which renders it eminently suitable for local application.

DOSE—gr. 10 to gr. 20 (0·65 gm. to 1·3 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Bismuth Subnitrate, B.P.

DOSE—gr. 5 to gr. 20 (0·3 gm. to 1·3 gm.)

Cartons of oz. 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Bismuth Tartrate *(Soluble)*

Readily soluble in water, yielding a bright permanent solution. Being slightly acid it is chemically and physiologically compatible with pepsin. 185 grains (12 gm.) with distilled water to 3-1/2 fl. oz. (100 c.c.) yield a preparation corresponding in strength to Liq. Bismuthi, P.B.

DOSE—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND

,, Hyoscyamine *(Pure Alkaloid)*

Lævo-rotatory. Free from atropine and hyoscine. This product will always be supplied unless dextro-Hyoscyamine is specified.

Dose—gr. 1/200 to gr. 1/100 (0·0003 gm. to 0·0006 gm.)

Tubes of gr. 5 (0·3 *gm.*) *and* 1 *gramme.*

,, Hyoscyamine (dextro-Hyoscyamine)

The optical isomeride of lævo-Hyoscyamine. It is inferior to its lævo-isomer in physiological activity.

Tubes of gr. 5 (0·3 *gm.*). *Bottles of* 1 *gramme.*

,, Hyoscyamine Sulphate, B. P.

Salt of pure lævo-rotatory Hyoscyamine. It is free from its dextro-isomer, which is much less active physiologically.

Dose—gr. 1/200 to gr. 1/100 (0·0003 gm. to 0·0006 gm.)

Tubes of gr. 5 (0·3 *gm.*) *and* 1 *gramme.*

,, Ipecacuanha sine Emetina

Ipecacuanha from which the emetic principles have been extracted. Practically free from alkaloid.

Dose—gr. 10 to gr. 30 (0·65 gm. to 2 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Iridin *(see page 292)*

,, Iron and Ammonium Citrate, B. P.

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 4 (113 *gm.*) *and oz.* 8 (227 *gm.*); *and in tins of* 1 *lb.* (454 *gm.*)

,, Iron and Ammonium Citrate *(Green)*

Differs slightly in composition from the official citrate, and contains about 15 per cent. of iron. It is readily soluble in water.

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Iron and Quinine Citrate, B. P.

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

For prices, see separate list

'Wellcome' Brand Products *continued*

'WELLCOME' BRAND

,, Iron Arsenate *(Soluble)*

Handsome green scales, containing arsenic equivalent to 34-35 per cent. of anhydrous ferric arsenate.

Dose—gr. 1/16 to gr. 1/4 (0·004 gm. to 0·015 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Iron Glycerophosphate

Handsome scales, readily soluble in warm water.

Dose—gr. 3 to gr. 6 (0·2 gm. to 0·4 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Iron Hypophosphite *(Soluble)*

Handsome greenish scales, distinguished from the ordinary iron hypophosphite by being readily soluble in water. Contains about 12 per cent. of iron.

Dose—gr. 1 to gr. 5 (0·06 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Iron Phosphate *(Soluble)*

In the form of bright green transparent scales, freely soluble in water. Corresponds to the preparation recognised by the United States Pharmacopœia.

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Iron Pyrophosphate *(Soluble)*

Soluble ferric pyrophosphate in green scales. It corresponds to the preparation recognised by the United States Pharmacopœia.

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Leptandrin

The true resinous principle of *Veronica virginica (Leptandra virginica)*, as distinguished from much of the leptandrin of commerce, which is merely an extract.

Dose—gr. 1/4 to gr. 2 (0·015 gm. to 0·13 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

'Wellcome' Brand Products *-continued*

'WELLCOME' BRAND—

,, Lithium Benzoate

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Lithium Citrate, B.P.

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Lithium Formate

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Lithium Salicylate *(Physiologically Pure)*

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Magnesium Glycerophosphate

Dose—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Manganese and Iron Citrate *(Soluble)*

Scale salt, easily soluble in water. Contains about 7 per cent. of manganese and 14 per cent. of iron in organic combination.

Dose—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Manganese and Iron Citrate with Arsenic *(Soluble)*

Contains 0·5 per cent. of arsenious anhydride, but is otherwise identical with Manganese and Iron Citrate *(Soluble)*.

Dose—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Manganese and Iron Citrate with Quinine *(Soluble)*

Contains 15 per cent. of quinine, but is otherwise identical with Manganese and Iron Citrate *(Soluble)*.

Dose—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Manganese and Iron Citrate with Strychnine *(Soluble)*

Contains 1 per cent. of strychnine, but is otherwise identical with Manganese and Iron Citrate *(Soluble)*.

Dose—gr. 1 to gr. 3 (0·06 gm. to 0·2 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Manganese and Iron Phosphate *(Soluble)*

A scale salt readily soluble in warm water. Contains about 7 per cent. of manganese and 14 per cent. of iron.

Dose—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Manganese Citrate *(Soluble)*

In the form of handsome, nearly colourless scales, readily soluble in water, containing about 12 per cent. of manganese in organic combination.

Dose—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Manganese Hypophosphite

Dose—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Manganese Peroxide *(Pure)*

Contains approximately 85 per cent. of MnO_2.

Dose—gr. 2 to gr. 10 (0·13 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Mercuric Potassium Iodide *(Soluble)*

Dose—gr. 1/12 to gr. 1/3 (0·005 gm. to 0·02 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Mercury Iodide, Red, B.P. (Mercuric Iodide)

Dose—gr. 1/32 to gr. 1/16 (0·002 gm. to 0·004 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Mercury Iodide, Yellow (Pure Mercurous Iodide)

A true mercurous iodide of definite and constant composition. Contains no free mercury.

Dose—gr. 1/8 to gr. 1 (0·008 gm. to 0·06 gm.)

Bottles of oz. 1 (28·3 *gm.*)

For prices, see separate list

'Wellcome' Brand Products *continued*

'WELLCOME' BRAND—

,, Mercury Oleate

This preparation contains an amount of mercury equivalent to 20 per cent. of mercuric oxide.

Pots of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Mercury Oxide, Yellow, B.P.

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Mercury Subchloride, B.P. (Calomel)

Of uniform physical character, prepared by sublimation. Being free from mercuric chloride and other contaminations, it exhibits the desired uniformity of action.

DOSE—gr. 1/2 to gr. 5 (0·03 gm. to 0·3 gm.)

Bottles of oz. 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Morphine Acetate, B.P.

DOSE—gr. 1/8 to gr. 1/2 (0·008 gm. to 0·03 gm.)

Bottles of oz. 1/8 (3·5 *gm.*), *oz.* 1/2 (14 *gm.*), *oz.* 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Morphine Hydrochloride, B.P.

DOSE—gr. 1/8 to gr. 1/2 (0·008 gm. to 0·03 gm.)

Bottles of oz. 1/8 (3·5 *gm.*), *oz.* 1/2 (14 *gm.*), *oz.* 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Morphine Sulphate

DOSE—gr. 1/8 to gr. 1/2 (0·008 gm. to 0·03 gm.)

Bottles of oz. 1/8 (3·5 *gm.*), *oz.* 1/2 (14 *gm.*), *oz.* 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Morphine Tartrate, B.P.

DOSE—gr. 1/8 to gr. 1/2 (0·008 gm. to 0·03 gm.)

Bottles of oz. 1/2 (14 *gm.*), *oz.* 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Nicotine

Pure re-distilled alkaloid of *Nicotiana tabacum.*

Bottles of 1 *gramme and* 5 *grammes.*

For prices, see separate list

'Wellcome' Brand Products *continued*

'WELLCOME' BRAND—

,, Nicotine Tartrate

A definite crystalline salt, readily soluble in water.

Bottles of 1 *gramme and* 5 *grammes.*

,, Pelletierine Tannate

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

Bottles of gr. 60 (3·9 *gm.*)

,, Physostigmine *(Pure Alkaloid)*

Tubes of gr. 2 (0·13 *gm.*) *and gr.* 5 (0·3 *gm.*)

,, Physostigmine Hydrobromide (Eserine Hydrobromide)

A readily soluble salt, non-deliquescent and stable, and consequently to be preferred to the sulphate.

DOSE—gr. 1/60 to gr. 1/20 (0·001 gm. to 0·003 gm.)

Tubes of gr. 5 (0·3 *gm.*) *and* 1 *gramme.*

,, Physostigmine Salicylate (Eserine Salicylate)

DOSE—gr. 1/60 to gr. 1/20 (0·001 gm. to 0·003 gm.)

Tubes of gr. 5 (0·3 *gm.*) *and* 1 *gramme.*

,, Physostigmine Sulphate (Eserine Sulphate), B.P.

DOSE—gr. 1/60 to gr. 1/20 (0·001 gm. to 0·003 gm.)

Tubes of gr. 1/2 (0·03 gm.), *gr.* 1 (0·06 *gm.*), *gr.* 2 (0·13 *gm.*) *and gr.* 5 (0·3 *gm.*)

,, Pilocarpine Hydrochloride

The 'Wellcome' Brand salts of pilocarpine are free from the less active *iso*pilocarpine and the inactive pilocarpidine. Purity is guaranteed by the respective melting points, which are indicated on each package.

DOSE—gr. 1/20 to gr. 1/2 (0·003 gm. to 0·03 gm.)

Tubes of 1 *gramme. Bottles of gr.* 60 (3·9 *gm.*), *oz.* 1/2 (14 *gm.*) *and oz.* 1 (28·3 *gm.*)

,, Pilocarpine Nitrate, B.P.

The nitrate is stable, and is the salt best adapted for general use.

DOSE—gr. 1/20 to gr. 1/2 (0·003 gm. to 0·03 gm.)

Tubes of 1 *gramme. Bottles of gr.* 60 (3·9 *gm.*), *oz.* 1/2 (14 *gm.*) *and oz.* 1 (28·3 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Piperine

The pure, crystallised alkaloid of black pepper.

DOSE—gr. 1 to gr. 5 (0·06 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Podophyllin (Podophylli Resina, P.B.)

Prepared strictly in accordance with the official method, from a carefully-selected drug.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Potassium Glycerophosphate

A syrupy liquid containing 50 per cent. of anhydrous potassium glycerophosphate.

DOSE—gr. 3 to gr. 8 (0·2 gm. to 0·5 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Potassium Hypophosphite

DOSE—gr. 1 to gr. 6 (0·06 gm. to 0·4 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Quinine Acetyl-salicylate

This product combines the therapeutic effects of quinine with those of acetyl-salicylic acid.

DOSE—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Quinine Bihydrochloride

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Quinine Bisulphate

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Quinine Hydrobromide

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Quinine Hydrochloride, B.P.

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Quinine Hypophosphite

Dose—gr. 1 to gr. 3 (0·06 gm. to 0·2 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Quinine Lactate

Dose—gr. 1 to gr. 5 (0·06 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Quinine Phosphate

Dose—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Quinine Quinate

Dose—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*)

,, Quinine Salicylate

Prepared from physiologically pure salicylic acid.

Dose—gr. 2 to gr. 6 (0·13 gm. to 0·4 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Quinine Sulphate (*Compact*)

This salt is presented in a more compact form of crystals than that usually supplied, but is identical in composition with the official salt. Its diminished bulk renders it more convenient for storage and dispensing.

Dose—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*). *Tins of oz.* 25 (709 *gm.*) *and oz.* 100 (2835 *gm.*)

,, Quinine Sulphate *(Large Flake)*, B.P.

This is the official salt in the usual bulky form of light feathery crystals.

We recommend in preference the compact crystals, which occupy one-third the space, as being more portable and convenient.

When ordering Quinine Sulphate, please indicate whether "compact" or "large flake" is required.

Dose—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Bottles of oz. 1/4 (7 *gm.*), *oz.* 1/2 (14 *gm.*) *and oz.* 1 (28·3 *gm.*). *Tins of oz.* 4 (113 *gm.*)*; also oz.* 25 (709 *gm.*) *and oz.* 100 (2835 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND

.. Scammony Resin, B.P.

This resin is issued in the form of a fine, light coloured powder, which is specially convenient for dispensing.

Dose—gr. 3 to gr. 8 (0·2 gm. to 0·5 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

.. Sodium Formate

Dose—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*)

.. Sodium Glycerophosphate

In the form of colourless crystalline flakes, permanent in air.

Dose—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

.. Sodium Hypophosphite (*Pure Crystals*)

In colourless transparent crystals containing one molecule of water of crystallisation. It is free from phosphate and phosphite.

Dose—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

.. Sodium Salicylate, B.P. (*Physiologically Pure*)

This salt is issued in "powder" and in "flake." When ordering, please indicate which is required.

Dose—gr. 10 to gr. 30 (0·65 gm. to 2 gm.)

Note.—Concentrated aqueous solutions (1 in 2) of pure Sodium Salicylate, when stored at low temperatures, are liable to deposit crystals of a somewhat less soluble salt, having the formula $C_6H_4(OH)COONa, 6\,H_2O$. When the bottle, in which crystallisation has occurred, is placed in warm water, the crystals rapidly dissolve, and, after well shaking, the original solution is again obtained.

Bottles of oz. 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and cartons of* 1 *lb.* (454 *gm.*)

.. Sodium Salicylate (*Natural*)

Dose—gr. 10 to gr. 30 (0·65 gm. to 2 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

.. Sparteine Sulphate

Dose—gr. 1/6 to gr. 1 (0·01 gm. to 0·06 gm.)

Bottles of gr. 60 (3·9 *gm.*) *and oz.* 1 (28·3 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND-

,, Strophanthin

A preparation of uniform activity, controlled by physiological test.

DOSE—gr. 1/500 to gr. 1/100 (0·00013 gm. to 0·0006 gm.)
Bottles of gr. 5 (0·3 *gm.*) *and* 1 *gramme.*

,, Strychnine (*Pure Alkaloid*), B.P.

DOSE—gr. 1/60 to gr. 1/15 (0·001 gm. to 0·004 gm.)
Bottles of oz. 1 (28·3 *gm.*)

,, Strychnine Hydrochloride, B.P.

DOSE—gr. 1/60 to gr. 1/15 (0·001 gm. to 0·004 gm.)
Bottles of oz. 1 (28·3 *gm.*)

,, Veratrine

The pure Alkaloid, not the mixture of alkaloids to which the name Veratrine is also applied.

Tubes of gr. 5 (0·3 *gm.*). *Bottles of* 1 *gramme and gr.* 60 (3·9 *gm.*)

EXTRACTS, TRADE MARK 'WELLCOME' BRAND

'Wellcome' Brand Extracts are prepared from specially-selected drugs of the highest quality, carefully picked over before treatment.

'WELLCOME' BRAND—

,, Aloes, B.P., Extract of Barbados

This preparation is made strictly according to the official method.

DOSE—gr. 1 to gr. 4 (0·06 gm. to 0·25 gm.)
Bottles of oz. 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Belladonna, B.P., Alcoholic Extract of

This preparation is made strictly according to the official method, and is standardised to contain 1 per cent. of total alkaloid.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)
Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Belladonna, B.P., Green Extract of

This preparation is made strictly according to the official method.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)
Pots of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Belladonna, Standardised, Green Extract of

This preparation is standardised to contain 1 per cent. of total alkaloid.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

Pots of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Cannabis Indica, B.P., Extract of *(Physiologically controlled, Wellcome Physiological Research Laboratories)*

This preparation is made strictly according to the official method.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

Pots of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Cascara Sagrada, B.P., Extract of

This preparation is made strictly according to the official method.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

Bottles of oz. 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Colchicum, B.P., Extract of

This preparation is made strictly according to the official method.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

Pots of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Colocynth, Powdered Compound Extract of

This preparation corresponds to the B.P. Extract.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

Bottles of oz. 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Ergot, B.P., Extract of (Ergotin)

(Made from ergot physiologically tested in the Wellcome Physiological Research Laboratories)

The ergot is carefully hand-picked and freed from all foreign matter. The extract is free from the objectionable properties sometimes imparted by excessive heat.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

Pots of oz. 1 (28·3 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Euonymus, B.P., Dry Extract of (Euonymin)

Prepared from the true drug, *Euonymus atropurpureus*, carefully picked over by hand before extraction.

DOSE—gr. 1 to gr. 2 (0·06 gm. to 0·13 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Gentian, B.P., Extract of

This preparation is made strictly according to the official method.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

Pots of oz. 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Hyoscyamus, B.P., Green Extract of

This preparation is made strictly according to the official method, but is standardised to contain 0·2 per cent. of total alkaloid.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

Pots of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Iris, Dry Extract of (Iridin)

From the carefully selected genuine *Iris versicolor.*

DOSE—gr. 1 to gr. 5 (0·06 gm. to 0·3 gm.)

Bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Jalap, Powdered Extract of

This preparation corresponds to the B.P. Extract.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

Bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Liquorice, B.P., Extract of

This preparation is made strictly according to the official method.

Pots of oz. 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Taraxacum, B.P., Extract of

This preparation is made strictly according to the official method.

DOSE—gr. 5 to gr. 15 (0·3 gm. to 1 gm.)

Pots of oz. 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

For prices, see separate list

STANDARDISED GRANULAR EXTRACTS

TRADE MARK 'WELLCOME' BRAND

'Wellcome' Brand Granular Extracts possess many advantages over the usual form of solid extracts. They are uniform and reliable, and more convenient for dispensing than the ordinary extracts.

In bottles of oz. 1 (28·3 *gm.*)

'WELLCOME' BRAND—

,, Belladonna (Green), Standardised Granular Extract of

This preparation corresponds to the B.P. Extract, but is standardised to contain 1 per cent. of total alkaloid.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

*,, Cascara Sagrada, Granular Extract of

This preparation corresponds to the B.P. Extract.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

* *Also in bottles of oz.* 4 (113 *gm.*)

,, Ergot, Granular Extract of

(Made from ergot physiologically tested in the Wellcome Physiological Research Laboratories)

This preparation corresponds to the B.P. Extract.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

,, Hyoscyamus, Standardised Granular Extract of

This preparation corresponds to the B.P. Extract, but is standardised to contain 0·2 per cent. of total alkaloid.

DOSE—gr. 2 to gr. 8 (0·13 gm. to 0·5 gm.)

,, Nux Vomica, Standardised Granular Extract of

This preparation corresponds to the B.P. Extract, and contains 5 per cent. of strychnine.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

,, Opium, Standardised Granular Extract of

This preparation corresponds to the B.P. Extract, and contains 20 per cent. of morphine.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Rhubarb, Granular Extract of

This preparation is made by a special process, whereby the full therapeutic value of the rhubarb is retained.

Dose—gr. 2 to gr. 6 (0·13 gm. to 0·4 gm.)

STANDARDISED LIQUID EXTRACTS

TRADE MARK 'WELLCOME' BRAND

These are standardised to represent definite quantities not of total alkaloids but of the active principle of the drug, so far as possible. With the exception of the B.P. preparations, which are prepared strictly according to the official directions, they are made by a special process embodying the latest researches on the subject. The miscible liquid extracts mix clear with water, and on this account may be employed with advantage when the ordinary liquid extracts would prove quite unsuitable. The reliability and uniformity of 'Wellcome' Brand Standardised Liquid Extracts commend them both for prescribing and for dispensing.

In bottles of fl. oz. 4 (114 c.c.), fl. oz. 8 (227 c.c.) and fl. oz. 16 (455 c.c.), with the exception of the Aromatic Liquid Extract, the Liquid Extract, the Glycerinated Liquid Extract of Cascara Sagrada, and Liquorice Liquid Extract, which are issued only in bottles of fl. oz. 16 (455 c.c.)

'WELLCOME' BRAND—

,, Aconite, Liquid Extract of

Standardised to contain 0·2 gm. of ether-soluble alkaloid in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

Dose—min. 1/4 to min. 1 (gtt. 1/4 to gtt. 1)

,, Belladonna, B.P., Liquid Extract of

Made strictly according to the official method, and standardised to contain 0·75 gm. of total alkaloid in 100 c.c. of extract.

Dose—min. 1/3 to min. 1 (gtt. 1/3 to gtt. 1)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Calabar Bean, Liquid Extract of

Made by a special process, and standardised to contain 0·15 gm. of total alkaloid in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

Dose—min. 1 to min. 4 (gtt. 1 to gtt. 4)

,, Cascara Sagrada, Aromatic Liquid Extract of

Made by a special process, is palatable and aromatic, and possesses the full activity of the official liquid extract, but contains less inert extractive.

It does not deposit on keeping, nor does it precipitate when diluted.

Dose { Laxative, min. 15 to min 30 (0·9 c.c. to 1·8 c.c.)
Cathartic, min. 30 to min. 60 (1·8 c.c. to 3·5 c.c.)

,, Cascara Sagrada, B.P., Liquid Extract of

Made strictly according to the official method.

Dose—min. 30 to min. 60 (1·8 c.c. to 3·5 c.c.)

,, Cascara Sagrada, Glycerinated Liquid Extract of

Dose—min. 30 to min. 60 (1·8 c.c. to 3·5 c.c.)

,, Cinchona, B.P., Liquid Extract of

Made strictly according to the official method, and standardised to contain 5 gm. of total alkaloid in 100 c.c. of extract.

Dose—min. 5 to min. 15 (gtt. 5 to 0·9 c.c.)

,, Cinchona (Miscible), Liquid Extract of

Made by a special process, and standardised to contain 5 gm. of total alkaloid in 100 c.c. of extract.

Dose—min. 5 to min. 15 (gtt. 5 to 0·9 c.c.)

,, Coca, B.P., Liquid Extract of

Made strictly according to the official method, but standardised to contain 0·5 gm. of petroleum-ether-soluble alkaloid in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

Dose—min. 30 to min. 60 (1·8 c.c. to 3·5 c.c.)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Coca (Miscible), Liquid Extract of

Made by a special process, and standardised to contain 0·5 gm. of petroleum-ether-soluble alkaloid in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

Dose—min. 30 to min. 60 (1·8 c.c. to 3·5 c.c.)

,, Colchicum Seeds, Liquid Extract of

Standardised to contain 0·5 gm. of colchicine in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

Dose—min. 1 to min. 3 (gtt. 1 to gtt. 3)

,, Ergot, B.P., Liquid Extract of

(Made from ergot physiologically tested in the Wellcome Physiological Research Laboratories)

Made strictly according to the official method.

Dose—min. 10 to min. 30 (0·6 c.c. to 1·8 c.c.)

,, Gelsemium, Liquid Extract of

Standardised to contain 0·1 gm. of gelsemine in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

Dose—min. 1 to min. 3 (gtt. 1 to gtt. 3)

,, Hamamelis, B.P., Liquid Extract of

Made strictly according to the official method.

Dose—min. 5 to min. 15 (gtt. 5 to 0·9 c.c.)

,, Hydrastis, B.P., Liquid Extract of

Made strictly according to the official method. but standardised to contain 2·5 gm. of hydrastine in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

Dose—min. 5 to min. 15 (gtt. 5 to 0·9 c.c.)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Hyoscyamus, Liquid Extract of

Standardised to contain 0·1 gm. of total alkaloid in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

DOSE—min. 3 to min. 10 (gtt. 3 to 0·6 c.c.)

,, Hyoscyamus (Miscible), Liquid Extract of

Standardised to contain 0·1 gm. of total alkaloid in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

DOSE—min. 3 to min. 10 (gtt. 3 to 0·6 c.c.)

,, Ipecacuanha, B.P., Liquid Extract of

Made strictly according to the official method, and is standardised to contain from 2 gm. to 2·25 gm. of total alkaloid in 100 c.c. of extract.

DOSE—Expectorant, min. 1/2 to min. 2 (gtt. 1/2 to gtt. 2)
Emetic, min. 15 to min. 20 (0·9 c.c. to 1·2 c.c.)

,, Jaborandi (Miscible), Liquid Extract of

Made by a special process, and is standardised to contain 0·5 gm. of pilocarpine in 100 c.c. of extract. One part by volume represents one part by weight of standard drug.

DOSE—min. 5 to min. 15 (gtt. 5 to 0·9 c.c.)

,, Liquorice, Liquid Extract of

Made from the finest quality Spanish liquorice root, by a special process, which retains the full demulcent properties of the drug, and affords a product of exceptional flavour and covering power.

DOSE—min. 30 to min. 60 (1·8 c.c. to 3·5 c.c.)

,, Nux Vomica, B.P., Liquid Extract of

Made strictly according to the official method, and standardised to contain 1·5 gm. of strychnine in 100 c.c. of extract.

DOSE—min. 1 to min. 3 (gtt. 1 to gtt. 3)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Opium, B.P., Liquid Extract of

Made strictly according to the official method, and standardised to contain 0·75 gm. of morphine in 100 c.c. of extract.

DOSE—min. 5 to min. 30 (gtt. 5 to 1·8 c.c.)

,, Opium (Miscible), Liquid Extract of

Made by a special process by which the narcotine is removed, and the extract rendered miscible with water. It is standardised to contain 0·75 gm. of morphine in 100 c.c. of extract, and is identical in strength with the B.P. preparation.

DOSE—min. 5 to min. 30 (gtt. 5 to 1·8 c.c.)

,, Sarsaparilla, B.P., Liquid Extract of

Made strictly according to the official method.

DOSE—fl. dr. 2 to fl. dr. 4 (7 c.c. to 14 c.c.)

,, Taraxacum, B.P., Liquid Extract of

Made strictly according to the official method.

DOSE—min. 30 to fl. dr. 2 (1·8 c.c. to 7 c.c.)

CONCENTRATED INFUSIONS

TRADE MARK 'WELLCOME' BRAND

'Wellcome' Brand Concentrated Infusions are made from carefully selected drugs by processes which preserve all the activity and aroma of the freshly-prepared infusions. They keep indefinitely and their diminished bulk renders them convenient for transport or storage. One fluid ounce added to seven fluid ounces of water makes a preparation corresponding to the official Infusion.

Bottles of fl. oz. 16 (455 *c.c.*)

'WELLCOME' BRAND—

,, Concentrated Infusion of Calumba
,, Concentrated Compound Infusion of Gentian
,, Concentrated Infusion of Quassia
,, Concentrated Infusion of Senega

For prices, see separate list

PHYSIOLOGICALLY STANDARDISED B.P. TINCTURES, TRADE MARK 'WELLCOME' BRAND

The methods adopted for physiologically standardising these preparations are based on results obtained in the Wellcome Physiological Research Laboratories and elsewhere, and are those which, in the light of our present knowledge, are best calculated to give accurate and reliable results.

Bottles of fl. oz. 4 (114 *c.c.*), *fl. oz.* 8 (227 *c.c.*) *and fl. oz.* 16 (455 *c.c.*)

DOSE—min. 5 to min. 15 (gtt. 5 to 0·9 c.c.)

'WELLCOME' BRAND—

,, Tincture of Cannabis Indica, B.P.

(Physiologically controlled, Wellcome Physiological Research Laboratories)

,, Tincture of Digitalis, B.P.

(Physiologically standardised, Wellcome Physiological Research Laboratories)

,, Tincture of Squill, B.P.

(Physiologically standardised, Wellcome Physiological Research Laboratories)

CONCENTRATED TINCTURES
TRADE MARK 'WELLCOME' BRAND

'Wellcome' Brand Concentrated Tinctures are prepared from picked drugs by a special process which retains the full therapeutic value, whilst the aroma of the diluted preparations is equal to that of tinctures prepared by the usual methods. They are specially suitable for dispensing, and their diminished bulk renders them convenient and economical for transport and storage.

Bottles of fl. oz. 4 (114 *c.c.*), *fl. oz.* 8 (227 *c.c.*) *and fl. oz.* 16 (455 *c.c.*)

The results of the alcoholic dilution of 'Wellcome' Brand Concentrated Tinctures are as shown on next page, one fluid ounce being used in each instance.

For prices, see separate list

'Wellcome' Brand Concentrated Tincture of	Amount and strength of Alcohol required for dilution of 1 fl. oz. of Con. Tinct.	Preparations Corresponding to
Aconite	9 fl. oz. of 70%	Tincture of Aconite, B.P.
Arnica	9 ,, ,, 70%	,, ,, Arnica, B.P.
Calumba	9 ,, ,, 60%	,, ,, Calumba, B.P.
Camphor Comp.	9 ,, ,, 60%	,, ,, Camphor Compound, B.P.
*Cannabis Indica	9 ,, ,, 90%	,, ,, Cannabis Indica, B.P.
Cantharides ...	9 ,, ,, 90%	,, ,, Cantharides, B.P.
Capsicum ...	9 ,, ,, 70%	,, ,, Capsicum, B.P.
Cardamoms Comp.	4 ,, ,, 60%	,, ,, Cardamoms Comp., B.P.
Cascarilla ...	4 ,, ,, 70%	,, ,, Cascarilla, B.P.
Catechu	2 ,, ,, 60%	,, ,, Catechu, B.P.
Chiretta	4 ,, ,, 60%	,, ,, Chiretta, B.P.
Cimicifuga ...	9 ,, ,, 60%	,, ,, Cimicifuga, B.P.
Cinchona	4 ,, ,, 70%	,, ,, Cinchona, B.P.
Cinchona Comp.	4 ,, ,, 70%	,, ,, Cinchona Compound, B.P.
Cochineal ...	9 ,, ,, 45%	,, ,, Cochineal, B.P.
Colchicum Seeds	4 ,, ,, 45%	,, ,, Colchicum Seeds, B.P.
Conium	4 ,, ,, 70%	,, ,, Conium, B.P.
Cubebs	4 ,, ,, 90%	,, ,, Cubebs, B.P.
†Digitalis ...	4 ,, ,, 60%	,, ,, Digitalis, B.P.
Gelsemium ...	9 ,, ,, 60%	,, ,, Gelsemium, B.P.
Gentian Comp. ...	9 ,, ,, 45%	,, ,, Gentian Compound, B.P.
Ginger	9 ,, ,, 90%	,, ,, Ginger, B.P.
Hamamelis ...	9 ,, ,, 45%	,, ,, Hamamelis, B.P.
Hops	4 ,, ,, 60%	,, ,, Hops, B.P.
Hydrastis ...	9 ,, ,, 60%	,, ,, Hydrastis, B.P.
Hyoscyamus ...	9 ,, ,, 45%	,, ,, Hyoscyamus, B.P.
Iodine	9 ,, ,, 90%	,, ,, Iodine, B.P.
Jaborandi ...	4 ,, ,, 45%	,, ,, Jaborandi, B.P.
Jalap	4 ,, ,, 70%	,, ,, Jalap, B.P.
Krameria ...	4 ,, ,, 60%	,, ,, Krameria, B.P.
Lavender Comp.	9 ,, ,, 90%	,, ,, Lavender Compound, B.P.
Lobelia	9 ,, ,, Spirit of Ether,	,, ,, Lobelia (Ethereal), B.P.
Myrrh	4 fl. oz. of 90%	,, ,, Myrrh, B.P.
Opium	9 ,, ,, 45%	,, ,, Opium, B.P.
Podophyllum ...	9 ,, ,, 90%	,, ,, Podophyllum, B.P.
Pyrethrum ...	9 ,, ,, 70%	,, ,, Pyrethrum, B.P.
Rhubarb Comp....	4 ,, ,, 60%	,, ,, Rhubarb Compound, B.P.
Saffron	9 ,, ,, 60%	,, ,, Saffron, B.P.
Senega	4 ,, ,, 60%	,, ,, Senega, B.P.
Senna Compound	4 ,, ,, 45%	,, ,, Senna Compound, B.P.
Serpentary ...	9 ,, ,, 70%	,, ,, Serpentary, B.P.
†Squill	4 ,, ,, 60%	,, ,, Squill, B.P.
Stramonium ...	4 ,, ,, 45%	,, ,, Stramonium, B.P.
†Strophanthus ...	9 ,, ,, 70%	,, ,, Strophanthus, B.P.
Sumbul	9 ,, ,, 70%	,, ,, Sumbul, B.P.
Tolu	4 ,, ,, 90%	,, ,, Balsam of Tolu, B.P.
Valerian, Ammon.	3 ,, ,, 60%	,, ,, Valerian, Ammon., B.P.

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* Physiologically controlled, Wellcome Physiological Research Laboratories.
† Physiologically standardised, Wellcome Physiological Research Laboratories.

'WELLCOME' Brand CHEMICALS were awarded GRAND PRIZES at St. Louis, 1904; Liége, 1905; Milan, 1906; Franco-British, London, 1908; Japan-British, London, 1910; Brussels, 1910; Turin, 1911.

TRADE MARK 'WELLCOME' BRAND

CONCENTRATED DIPHTHERIA ANTITOXIN

In Syringe-containers

This product consists of the antitoxic globulins separated by a method of salt precipitation from Diphtheria Antitoxic Serum.

Although the fraction of the serum which is removed in the process of concentration possesses no antitoxic value, it is at least equally responsible with the antitoxin-bearing proteins for those incidental toxic symptoms which sera may produce in susceptible patients.

IMPORTANT.—In the resultant product 1000 Ehrlich units are contained in, at most, 1 c.c. of fluid as compared with the 2·5 c.c. necessary to contain the same number of units in the case of an average unconcentrated serum.

Physicians will appreciate the advantages which are afforded by such a reduction in the volume to be injected.

Each container presents an accurate dose of antitoxin in a thoroughly reliable syringe.

(*See page* 219)

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TRADE 'EPININE' MARK

(3:4-dihydroxyphenylethylmethylamine)

The Synthetic Hæmostatic

The result of investigations in the Laboratories of the 'Wellcome' Chemical Works, London (Eng.).

It possesses the characteristic physiological action of the extract of the supra-renal gland, being approximately 1 10 as active as the supra-renal active principle, according to measurements of their effects on the blood-pressure of the cat.

Since it is a synthetic substance forming crystalline salts, its purity can be chemically guaranteed.

(See page 197*)*

TRADE MARK 'VAPOROLE' BRAND 'EPININE' TRADE MARK

Each product presents 1 c.c. of sterile solution (1 in 100) in an hermetically-sealed container, for hypodermic use.

Additional stability is thus secured.

'EPININE' is also issued in combination with Cocaine Hydrochloride, under the title TRADE MARK 'EPICAINE.'

(See page 270*)*

TRADE MARK ‘ERNUTIN’ BRAND PRODUCTS

Ergot Idealised

‘ERNUTIN’ presents the active therapeutic principles of ergot—Ergotoxine, ‘Tyramine’ and ‘Ergamine’—in stable solution and in a state of chemical purity.

‘ERNUTIN’ never varies in strength.

‘ERNUTIN’ is reliable. It is successful when ordinary galenicals fail owing to the variability of the crude drug.

After normal confinements, give 30–60 minims of ‘ERNUTIN,’ by the mouth, every three hours after the completion of the third stage of labour, until firm uterine contraction is produced.

In post-partum hæmorrhage:—In ordinary cases inject, hypodermically, 5–10 minims of ‘VAPOROLE’ ‘ERNUTIN.’ In urgent cases, it should be given by intramuscular injection.

(See pages 198 *and* 271*)*

TRADE MARK 'VAPOROLE' BRAND

PITUITARY (INFUNDIBULAR) EXTRACT

In Shock or Collapse

The reputation achieved by pituitary extract as a restorative in cases of shock or collapse following on, or occurring during surgical operations, or after parturition, etc., is based upon the successful results obtained with the 'Vaporole' product.

It produces a rapid and persistent rise of blood-pressure and slows and strengthens the heart-beat.

(See page 271*)*

TRADE 'LODAL' MARK

(6 : 7-Dimethoxy-2-methyl-3 : 4-dihydro*iso*quinolinium Chloride)

An important Uterine Styptic

Causes marked tonic contraction of the uterus in both pregnant and non-pregnant conditions.

Clinically, 'LODAL' has given good results in cases of uterine hæmorrhage and pain.

'Tabloid' Brand 'LODAL' presents accurate doses of one grain, sugar-coated.

(See page 249*)*

TRADE 'KEPLER' MARK

COD LIVER OIL WITH MALT EXTRACT

The combination of cod liver oil and malt that is digested by invalids, infants and convalescents.

It makes flesh, fat and bone when ordinary emulsions make trouble.

Its rich nutty malt flavour is much appreciated by fastidious patients.

ABOUT THE PRODUCTION OF 'KEPLER' MALT PRODUCTS

The finest ingredients the world produces, the most intimate knowledge, the widest experience, and the most costly machinery that science has yet devised, are the factors which secure the characteristic superiority of 'KEPLER' MALT PRODUCTS.

(See pages 207 *and* 208*)*

TRADE 'NIZIN' MARK

A Stimulating Antiseptic

'Nizin,' a zinc salt of sulphanilic acid, is a distinct advance on sulphate and other salts of zinc hitherto in use.

In acute gonorrhœa, injections have proved very successful.

Solutions of the strengths recommended for use are non-irritating and non-toxic.

'Nizin' is also used with success in conjunctivitis.

'Soloid' 'Nizin' presents the salt in accurate amounts and readily soluble.

(See pages 210 *and* 227*)*

TRADE MARK 'SOLOID' BRAND

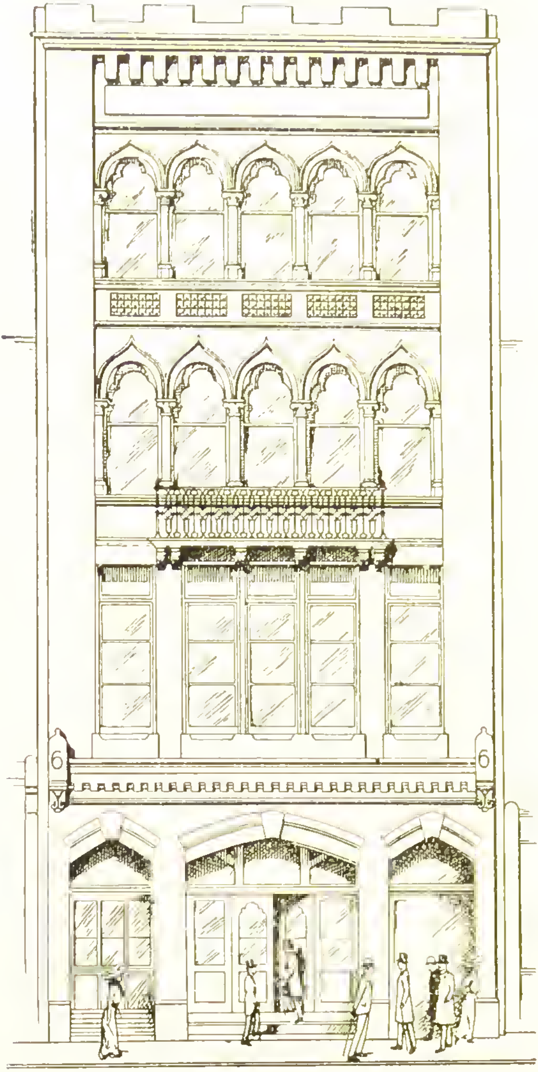
URINE TEST CASE, No. 510

A complete outfit of apparatus and reagents in a nickel-plated metal case which can be carried in the pocket, if necessary.

Ideal for consulting-room, sick-room or laboratory use.

Facilitates accurate tests for sugar, albumin, etc. Obviates mess and waste. Each item of the contents is of the finest quality. The 'Soloid' brand reagents do not deteriorate.

(See page 177*)*



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LIÉGE 1905	ONE GRAND PRIZE ONE DIPLOMA OF HONOUR TWO GOLD MEDALS
MILAN 1906	ONE GRAND PRIZE
LONDON (Franco-British) 1908	TWO GRAND PRIZES
LONDON (Japan-British) 1910	ONE GRAND PRIZE
BRUSSELS 1910	THREE GRAND PRIZES ONE DIPLOMA OF HONOUR
TURIN 1911	THREE GRAND PRIZES ONE DIPLOMA OF HONOUR

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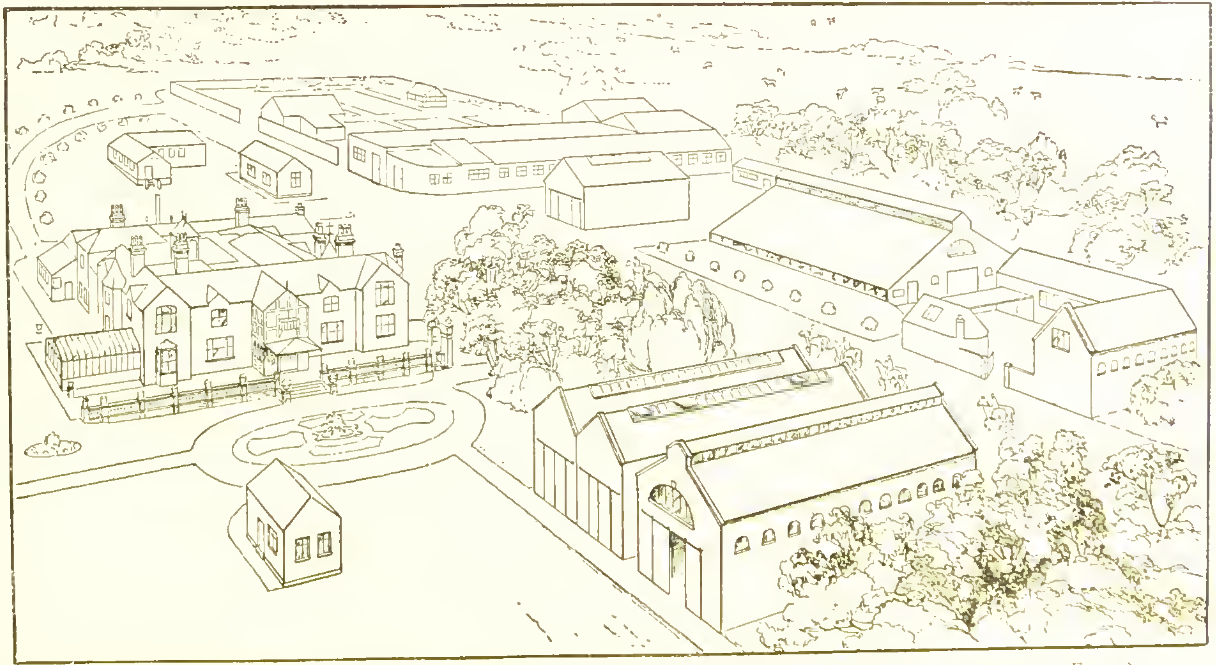

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Liége 1905	ONE GRAND PRIZE TWO GOLD MEDALS
Milan 1906	ONE GRAND PRIZE
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SEATTLE (Alaska-Yukon) 1909	ONE GRAND PRIZE
LONDON (Japan-British) 1910	FIVE GRAND PRIZES ONE GOLD MEDAL
BRUSSELS 1910	EIGHT GRAND PRIZES THREE DIPLOMAS OF HONOUR ONE GOLD MEDAL
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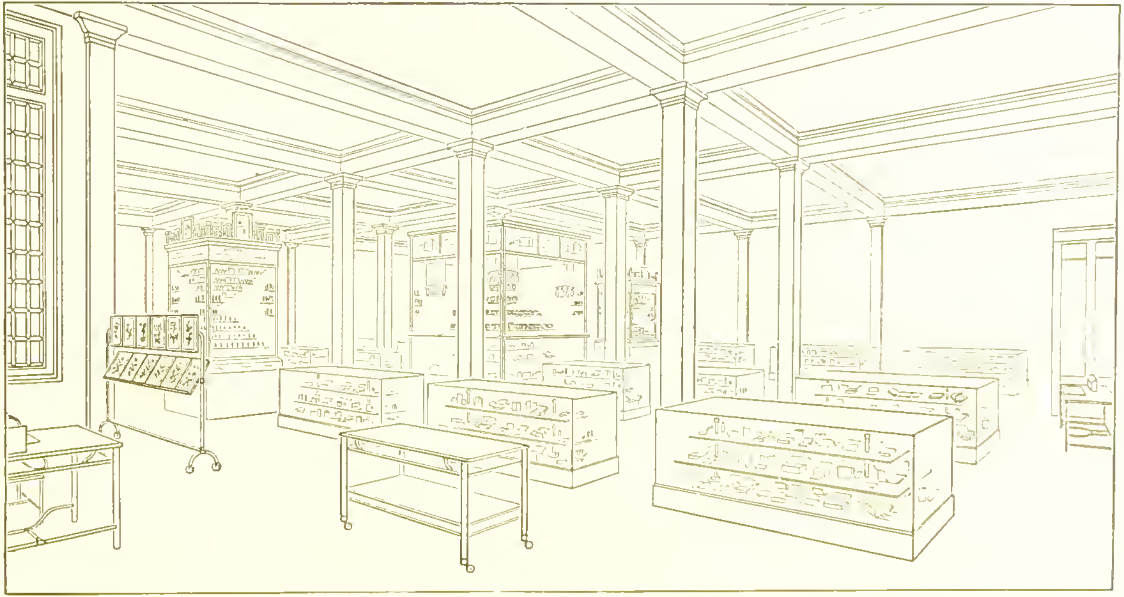

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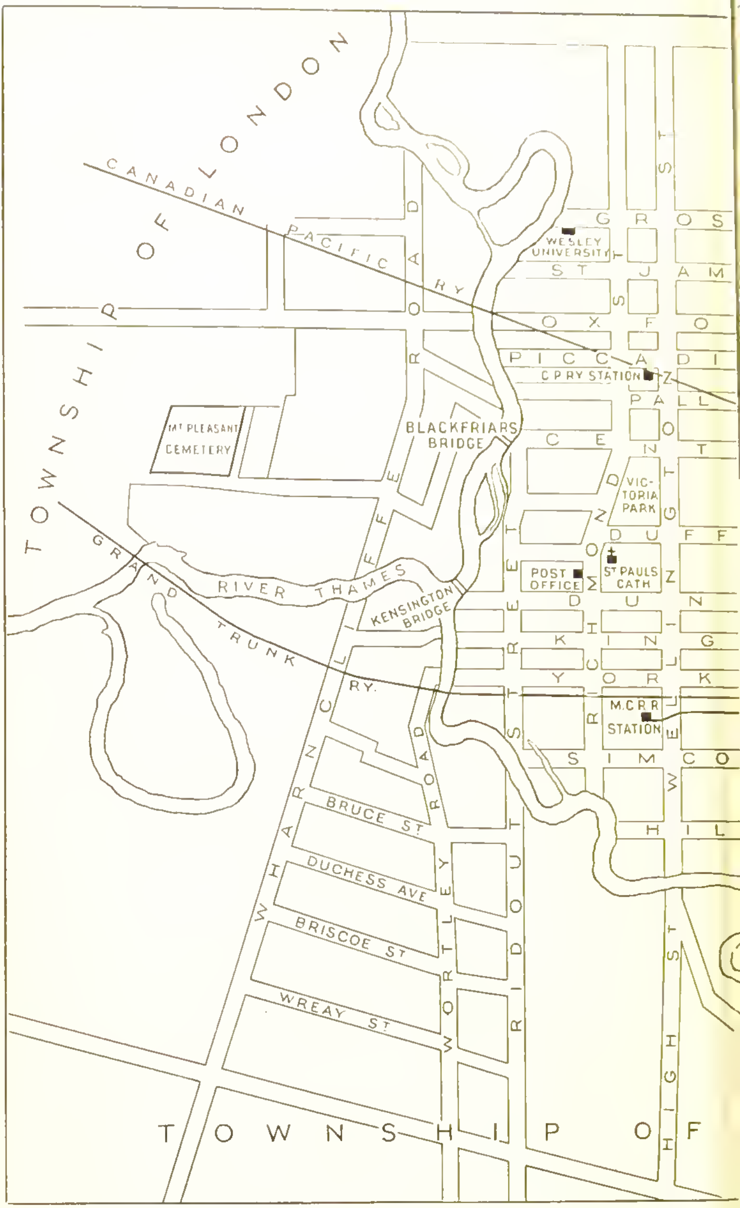
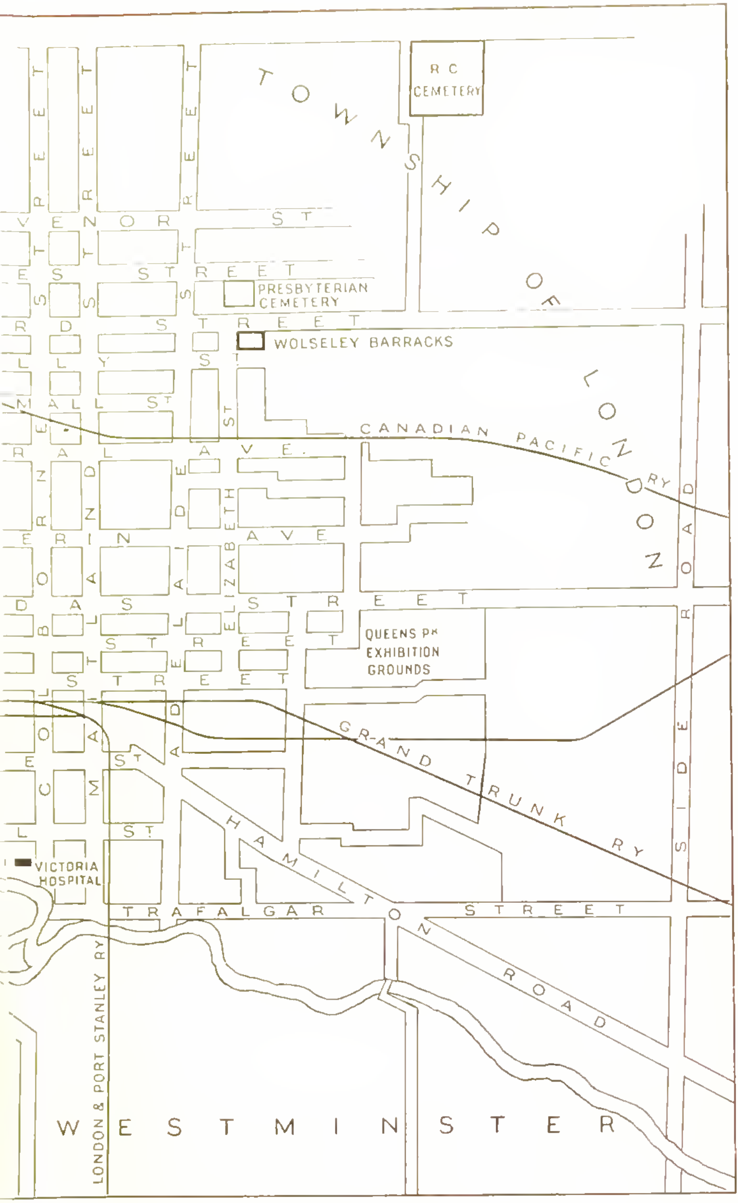


Plan of London



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